

GenCore version 5.1.6  
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OM nucleic - nucleic search, using sw model

Run on: September 16, 2004, 19:34:58 ; Search time 1997 Seconds  
(without alignments)  
7132.829 Million cell updates/sec

Title: US-10-071-370A-3  
Perfect score: 477  
Sequence: 1 atgctggccatgaagctgtt.....ctgaggaacccacacctgtga 477

Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 27513289 seqs, 14931090276 residues  
Total number of hits satisfying chosen parameters: 55026578

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : EST:  
1: em\_estba:\*  
2: em\_esthum:\*  
3: em\_estin:\*  
4: em\_estmu:\*  
5: em\_estov:\*  
6: em\_estpl:\*  
7: em\_estro:\*  
8: em\_htc:\*  
9: gb\_est1:\*  
10: gb\_est2:\*  
11: gb\_htc:\*  
12: gb\_est3:\*  
13: gb\_est4:\*  
14: gb\_est5:\*  
15: em\_estfun:\*  
16: em\_estom:\*  
17: em\_gss\_hum:\*  
18: em\_gss\_inv:\*  
19: em\_gss\_pln:\*  
20: em\_gss\_vrt:\*  
21: em\_gss\_fun:\*  
22: em\_gss\_mam:\*  
23: em\_gss\_mus:\*  
24: em\_gss\_pro:\*  
25: em\_gss\_rod:\*  
26: em\_gss\_phg:\*  
27: em\_gss\_vrl:\*  
28: gb\_gss1:\*  
29: gb\_gss2:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Match	Length	ID	Description
1	449.8	94.3	616	13	BU759674
2	419.4	87.9	421	14	CB797697
3	419.4	87.9	829	10	BE569697
4	419.4	87.9	863	14	CF616127
					BU759674 UI-R-FF0-
					CB797697 AMGNNUC:M
					BE569697 601331496
					CF616127 AGENCOURT

5	419.4	87.9	1583	11	AK042891	AK042891 Mus muscu
6	412.8	86.5	936	12	BI905649	BI905649 603167660
7	407.4	85.4	1579	11	AK088943	AK088943 Mus muscu
8	405.2	84.9	932	14	CB204450	CB204450 AGENCOURT
9	405.2	84.9	933	13	BQ936933	BQ936933 AGENCOURT
10	402.4	84.4	744	12	BI663772	BI663772 603288511
11	364.6	76.4	455	9	AI272466	AI272466 uk06C06.Y
12	361.8	75.8	759	12	BI685632	BI685632 603309146
13	361.2	75.7	489	12	BI790853	BI790853 id09h10.Y
14	361.2	75.7	958	14	CF582990	CF582990 AGENCOURT
15	358.8	75.2	908	12	BI108026	BI108026 602902409
16	343.6	72.0	794	12	BI852987	BI852987 603379807
17	341.2	71.5	733	12	BG923923	BG923923 602824355
18	337	70.6	709	10	AW914155	AW914155 EST345459
19	332.4	69.7	874	10	BE570632	BE570632 601329939
20	331.6	69.5	724	12	BI692908	BI692908 603344629
21	331.4	69.5	458	14	CB739080	CB739080 AMGNNUC:M
22	323.4	67.8	942	14	CA976301	CA976301 AGENCOURT
23	317.8	66.6	806	12	BI648112	BI648112 603278429
24	313.6	65.7	785	12	BG976319	BG976319 602846588
25	311.8	65.4	665	12	BI525252	BI525252 602924679
26	297.8	62.4	669	12	BI653120	BI653120 603300663
27	284.2	59.6	657	12	BG920099	BG920099 602821273
28	282.2	59.2	482	29	AY410378	AY410378 Mus muscu
29	278.8	58.4	837	12	BI662663	BI662663 603286057
30	271.2	56.9	673	10	BF608215	BF608215 MY1_00109
31	258.8	54.3	678	13	BQ109005	BQ109005 imageqc.8
32	238.4	50.0	958	9	AL543693	AL543693 AL543693
33	234.6	49.2	617	10	BE533260	BE533260 601234582
34	230.2	48.3	513	29	AY410376	AY410376 Homo sapi
35	230.2	48.3	513	29	AY410377	AY410377 Pan trogl
36	230.2	48.3	1009	11	CNSLT119B	BX248289 human ful
37	230.2	48.3	1031	13	BQ070531	BQ070531 AGENCOURT
38	230.2	48.3	1153	9	AL552106	AL552106 AL552106
39	230.2	48.3	1201	9	AL543185	AL543185 AL543185
40	230.2	48.3	1201	9	AL547463	AL547463 AL547463
41	229.8	48.2	986	9	AL552344	AL552344 AL552344
42	229.8	48.2	1035	9	AL546005	AL546005 AL546005
43	229.8	48.2	1201	9	AL540600	AL540600 AL540600
44	228.6	47.9	1201	13	BX459214	BX459214 BX459214
45	227.2	47.6	939	13	BUI50305	BUI50305 AGENCOURT

ALIGNMENTS

RESULT 1  
BU759674/c  
LOCUS BU759674 616 bp mRNA linear EST 10-OCT-2002  
DEFINITION UI-R-FF0-cpf-c-16-0-UI.s1 UI-R-FF0 Rattus norvegicus cdna clone  
UI-R-FF0-cpf-c-16-0-UI 3', mRNA sequence.  
ACCESSION BU759674 GI:23723459  
VERSION BU759674.1  
KEYWORDS EST.  
SOURCE Rattus norvegicus (Norway rat)  
ORGANISM Rattus norvegicus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;  
Rattus.

REFERENCE 1 (bases 1 to 616)  
AUTHORS Bonaldo,M.F., Lennon,G. and Soares,M.B.  
TITLE Normalization and subtraction: two approaches to facilitate gene discovery  
JOURNAL Genome Res. 6 (9), 791-806 (1996)  
MEDLINE 97044477  
PUBMED 8889548  
COMMENT Contact: Soares, MB  
Coordinated Laboratory for Computational Genomics  
University of Iowa  
375 Newton Road , 4156 MEBRF, Iowa City, IA 52242, USA  
Tel: 319 335 8250  
Fax: 319 335 9565  
Email: bento-soares@uiowa.edu

Tissue Procurement: Jeff Stevens, University of Iowa  
cDNA Library preparation: Dr. M. Bento Soares, University of Iowa  
cDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa  
DNA Sequencing by: Dr. M. Bento Soares, University of Iowa  
Clone Distribution: DISTRIBUTION: Researchers may obtain clones  
from Research Genetics (www.resgen.com).  
The following repetitive elements were found in this cDNA  
sequence: 1-26, >POLY A#Simple\_repeat (matched complement)  
Seq primer: M13 FORWARD  
POLYA=Yes.

FEATURES  
source  
1. .616  
/organism="Rattus norvegicus"  
/mol\_type="mRNA"  
/db\_xref="taxon:10116"  
/clone="UI-R-FF0-cpf-c-16-0-UI"  
/tissue\_type="Mixed tissues"  
/dev\_stage="Adult"  
/lab\_host="DH10B (Life Technologies) (T1 phage resistant)"  
/clone\_lib="UI-R-FF0"  
/note="Vector: pT7T3-Pac (Pharmacia) with a modified  
polylinker; Site 1: Ecor I; Site 2: Not I; UI-R-FF0 is a  
subtracted cDNA library containing the following  
tissue(s): Normal cartilage and SR-JWS Tumor Line . The  
subtraction was made according to Bonaldo, Lennon and  
Soares, Genome Research, 6:791-806, 1996. The  
oligonucleotide used to prime the synthesis of  
first-strand cDNA contains a library tag sequence that is  
located between the Not I site and the (dT)18 tail. The  
sequence tags for these libraries are: CTAATGGAGC,  
CATTCTTGTA.  
TAG TISSUE=cartilage  
TAG LIB=UI-R-FF0  
TAG\_SEQ=CTAATGGAGC"

ORIGIN

Query Match 94.3%; Score 449.8; DB 13; Length 616;  
Best Local Similarity 99.0%; Pred. No. 1.1e-113;  
Matches 473; Conservative 0; Mismatches 3; Indels 2; Gaps 2;  
QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60  
Db 558 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 499  
QY 61 T-CCCAGGGGCCCTGTCTGTCTGGGAACTCAACAGAAATGGAAAGTGGTGCCTTTCAA 119  
Db 498 TCCCAGGGGCCCTGTNTGTCTGGGAACTCAACAGAAATGGAAAGTGGTGCCTTTCAA 439  
QY 120 TGAAGTGTGGGGCCGCGAGCTACTGCGGCAATGGAGAAGCTGGTGACATTCAGATGA 179  
Db 438 TGAAGTGTGGGGCCGCGAGCTACTGCGGCAATGGAGAAGCTGGTGACATTCAGATGA 379  
QY 180 ACACCTAATGAAGTGTCTCATATATTCAGTCCGTCCGTTCCTCTGAGTCGCTGTAG 239  
Db 378 ACACCTAATGAAGTGTCTCATATATTCAGTCCGTCCGTTCCTCTGAGTCGCTGTAG 319  
QY 240 TGGCTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTAT 299  
Db 318 TGGCTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTAT 259  
QY 300 GCAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTCCTACGTGGAGATGACATTCTC 359  
Db 258 GCAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTCCTACGTGGAGATGACATTCTC 199  
QY 360 TCAGGATGTACTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGCAGAAAGGAGGAA 419  
Db 198 TCAGGATGTCTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGCAGAAAGGAGGAA 139  
QY 420 AACCAAGGGGAAGGAGGAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
Db 138 AACCAAGGGGAAGGAGGAGC-AAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 82

RESULT 2

CB797697  
LOCUS  
DEFINITION  
CB797697 421 bp mRNA linear EST 16-MAY-2003  
AMGNNUC:MRPE4-00164-G5-A mrpe4 (10380) Rattus norvegicus cDNA clone  
mrpe4-00164-g5 5', mRNA sequence.  
CB797697  
ACCESSION  
VERSION  
KEYWORDS  
SOURCE  
ORGANISM  
Rattus norvegicus (Norway rat)  
Rattus norvegicus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;  
Rattus.  
REFERENCE  
AUTHORS  
TITLE  
JOURNAL  
COMMENT  
1 (bases 1 to 421)  
Amgen EST Program.  
Amgen Rat EST Program  
Unpublished (2003)  
Contact: Dan Fitzpatrick  
Amgen, Inc  
One Amgen Center Drive, Thousand Oaks, CA 91320-1799, USA  
Tel: 805 447-4881  
Plate: 00164 row: g column: 5.  
Location/Qualifiers  
1. .421  
/organism="Rattus norvegicus"  
/mol\_type="mRNA"  
/db\_xref="taxon:10116"  
/clone="mrpe4-00164-g5"  
/tissue\_type="placenta embryo"  
/clone\_lib="mrpe4 (10380)"  
/note="Vector: pSPORT1; Site\_1: SalI; Site\_2: NotI;  
placenta embryo day 17"

ORIGIN

Query Match 87.9%; Score 419.4; DB 14; Length 421;  
Best Local Similarity 99.8%; Pred. No. 2.5e-105;  
Matches 420; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
QY 3 GCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 62  
Db 1 GCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60  
QY 63 CCAGGGGCCCTGTCTGTCTGGGAACTCAACAGAAATGGAAAGTGGTGCCTTTCAATGA 122  
Db 61 CCAGGGGCCCTGTCTGTCTGGGAACTCAACAGAAATGGAAAGTGGTGCCTTTCAATGA 120  
QY 123 AGTGTGGGGCCGCGAGCTACTGCGGCAATGGAGAAGCTGGTGACATTCAGATGAACA 182  
Db 121 AGTGTGGGGCCGCGAGCTACTGCGGCAATGGAGAAGCTGGTGACATTCAGATGAACA 180  
QY 183 CCCTAATGAAGTGTCTCATATATTCAGTCCGTCCGTTCCTCTGAGTCGCTGTAGTG 242  
Db 181 CCCTAATGAAGTGTCTCATATATTCAGTCCGTCCGTTCCTCTGAGTCGCTGTAGTG 240  
QY 243 CTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATGCA 302  
Db 241 CTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATGCA 300  
QY 303 GATCTTAAAGATTCCCCCAATCGGGATCCACATTCTCCTACGTGGAGATGACATTCTCTCA 362  
Db 301 GATCTTAAAGATTCCCCCAATCGGGATCCACATTCTCCTACGTGGAGATGACATTCTCTCA 360  
QY 363 GGATGTACTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGCAGAAAGGAGGAAAC 422  
Db 361 GGATGTCTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGCAGAAAGGAGGAAAC 420  
QY 423 C 423  
Db 421 C 421

RESULT 3

BE569697

LOCUS BE569697 829 bp mRNA linear EST 15-AUG-2000  
DEFINITION 601331496F1 NCI\_CGAP\_Mam6 Mus musculus cDNA clone IMAGE:3709294 5',  
mRNA sequence.  
ACCESSION BE569697  
VERSION BE569697.1 GI:9813521  
KEYWORDS EST.  
SOURCE Mus musculus (house mouse)  
ORGANISM Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
REFERENCE 1 (bases 1 to 829)  
AUTHORS NIH-MGC http://mgi.nci.nih.gov/.  
TITLE National Institutes of Health, Mammalian Gene Collection (MGC)  
JOURNAL Unpublished (1999)  
COMMENT Contact: Robert Strausberg, Ph.D.  
Email: cgapbs-remail.nih.gov  
Tissue Procurement: Jeffrey Green M.D.  
cDNA Library Preparation: Life Technologies, Inc.  
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Incyte Genomics, Inc.  
Clone distribution: MGC clone distribution information can be  
found through the I.M.A.G.E. Consortium/LLNL at:  
http://image.llnl.gov  
Plate: LAM8929 row: 0 column: 23  
High quality sequence stop: 721.  
Location/Qualifiers  
1. 829  
/organism="Mus musculus"  
/mol\_type="mRNA"  
/strain="FVB/N"  
/db\_xref="taxon:10090"  
/clone="IMAGE:3709294"  
/sex="female, virgin"  
/tissue\_type="infiltrating ductal carcinoma"  
/dev\_stage="5 months"  
/lab\_host="DH10B"  
/clone\_lib="NCI\_CGAP\_Mam6"  
/note="Organ: mammary; Vector: pCMV-SPORT6; Site 1: SalI;  
Site 2: NotI; Cloned unidirectionally. Primer: Oligo dT.  
Library constructed by Life Technologies. Investigator  
providing samples: Jeffrey Green, M.D., NIH"

ORIGIN  
Query Match 87.9%; Score 419.4; DB 10; Length 829;  
Best Local Similarity 92.5%; Pred. No. 3.2e-105;  
Matches 441; Conservative 0; Mismatches 36; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTACCTTCTTTCAGGTCCTAGCTGGTGGTGGTGCAC 60  
Db 14 ATGCTGGTCATGAAGCTGTTACCTTCTTTCAGGTCCTAGCTGGTGGTGGTGCAT 73  
QY 61 TCCAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTCAAT 120  
Db 74 TCCAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTCAAC 133  
QY 121 GAAGTGTGGGCGCAGCTACTGCGGCCAATGGAGAAGCTGGTGACATTGCAGATGAA 180  
Db 134 GAAGTGTGGGTCGCAGCTACTGTCGCCCATGGAGAAGCTGGTGACATCTTGGATGAA 193  
QY 181 CACCCTAATGAAGTGTCTCATATATTACGTCGTCATGTGTCCTTCTGAGTCGCTAGT 240  
Db 194 TACCCTGATGAGGTGTCACATATTTCAGTCGTCCTGTGTCCTTCTGAGTCGCTAGT 253  
QY 241 GGCTGCTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 254 GGCTGCTGGTGATGAAGGTCTGCACCTGTGTGCCGATAAAGACAGCCCAACATCACTATG 313  
QY 301 CAGATCTTAAAGATTCCTCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCT 360  
Db 314 CAGATCTTGAAGATTCCTCCCAATCGGGATCCACATTTCTATGTGGAGATGACATTTTCT 373  
QY 361 CAGGATGTACTCTGGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420

Db 374 CAGGATGTGCTCTGTGAATGCAGACCTATTCTGGAGACGACAAAGGAGGAGAAA 433  
QY 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
Db 434 ACCAAGGGGAAGAGGAAGAGGAGTAGAAACTCACAGACTGAGGAACCCACCCGTGA 490

RESULT 4  
CF616127 863 bp mRNA linear EST 01-OCT-2003  
LOCUS AGENCOURT 15765547 NIH MGC.203 Mus musculus cDNA clone  
DEFINITION IMAGE:30522779 5', mRNA sequence.  
ACCESSION CF616127  
VERSION CF616127.1 GI:37232101  
KEYWORDS EST.  
SOURCE Mus musculus (house mouse)  
ORGANISM Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
REFERENCE 1 (bases 1 to 863)  
AUTHORS NIH-MGC http://mgi.nci.nih.gov/.  
TITLE National Institutes of Health, Mammalian Gene Collection (MGC)  
JOURNAL Unpublished (1999)  
COMMENT Contact: Daniela S. Gerhard, Ph.D.  
Office of Cancer Genomics  
National Cancer Institute / NIH  
Bldg. 31 Rm10A07 Bethesda, MD 20892  
Email: cgapbs-remail.nih.gov  
Tissue Procurement: Naryan Bhat  
cDNA Library Preparation: Express Genomics  
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Agencourt Bioscience Corporation  
Clone distribution: MGC clone distribution information can be  
found through the I.M.A.G.E. Consortium/LLNL at:  
http://image.llnl.gov  
Plate: NDAM599 row: k column: 12  
High quality sequence stop: 657.  
Location/Qualifiers  
1. 863  
/organism="Mus musculus"  
/mol\_type="mRNA"  
/db\_xref="taxon:10090"  
/clone="IMAGE:30522779"  
/lab\_host="DH10B (phage-resistant)"  
/clone\_lib="NIH MGC.203"  
/note="Organ: placenta; Vector: pExpress-1; Site 1: EcoRV;  
Site 2: NotI; RNA obtained from three placentas from  
female C57/BL6 mouse at 16 days pregnancy. Tissues were  
snap-frozen and kept at -80C for two days before RNA  
extraction and purification (Tri-reagent method). cDNA was  
primed using oligo-dT primer:  
5'-pGACTAGTTCTAGATCGGAGCGCGCCGCTT)25-3' and cloned into  
the EcoRV/NotI sites of pExpress-1. Size-selection >1kb  
resulted in an average insert size of 1.3 kb. This  
primary, microquantity library is normalized to Cot5  
(non-normalized primary library is NIH MGC.222) and was  
constructed by Express Genomics (Frederick, MD)."

ORIGIN  
Query Match 87.9%; Score 419.4; DB 14; Length 863;  
Best Local Similarity 92.5%; Pred. No. 3.3e-105;  
Matches 441; Conservative 0; Mismatches 36; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTTCACTTGTCTTTCAGGTCCTAGCTGGTGGTGGTGCAC 60  
Db 226 ATGCTGGTCATGAAGCTGTTTCACTTGTCTTTCAGGTCCTAGCTGGTGGTGGTGCAT 285  
QY 61 TCCAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTCAAT 120  
Db 286 TCCAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTCAAC 345  
QY 121 GAAGTGTGGGCGCAGCTACTGCGGCCAATGGAGAAGCTGGTGACATTGCAGATGAA 180



Db 346 GAAGTGTGGGTCGCAGCTACTGTGCGGCCCATGAGAAAGCTGGTGATCATCTTGGATGAA 405

QY 181 CACCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240

Db 406 TACCCTGATGAGGTGTCTCATATATTAGTCCGTCGCTGTGTCCTTCTGAGTCGCTGTAGT 465

QY 241 GGCTGCTGTGGTGACGAGGTGTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

Db 466 GGCTGCTGTGGTGATGAAGGTGTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 525

QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCCATCTTCTACGTGGAGATGACATTTCTCT 360

Db 526 CAGATCTTGAAGATTCCCCCAATCGGGATCCCATCTTCTATGTGGAGATGACATTTTCT 585

QY 361 CAGGATGTACTCTGCAATGCAGGCCCTATTCTGGAGACGACAAAGGCCAGAAAGGAGGAAA 420

Db 586 CAGGATGTCTCTGATGCAGACCTATTCTGGAGACGACAAAGGCCAGAAAGGAGGAAA 645

QY 421 ACCAAGGGGAAGAGGAAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477

Db 646 ACCAAGGGGAAGAGGAAAGGAGTAGAAGTACAGACTGAGGAACCCCACTGTGA 702

RESULT 5  
AK042891  
LOCUS  
DEFINITION  
AK042891 1583 bp mRNA linear HTC 19-SEP-2003  
Mus musculus 7 days neonate cerebellum cDNA, RIKEN full-length  
enriched library, clone:A730035M09 product:placental growth factor,  
full insert sequence.

ACCESSION  
VERSION  
KEYWORDS  
SOURCE  
ORGANISM  
AK042891 GI:26335388  
HTC; CAP trapper.  
Mus musculus (house mouse)  
Mus musculus

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

1 Carninci,P. and Hayashizaki,Y.  
High-efficiency full-length cDNA cloning  
Meth. Enzymol. 303, 19-44 (1999)  
99279253  
10349636

2 Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,  
Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.  
Normalization and subtraction of cap-trapper-selected cDNAs to  
prepare full-length cDNA libraries for rapid discovery of new genes  
Genome Res. 10 (10), 1617-1630 (2000)  
20499374  
11042159

3 Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P.,  
Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M.,  
Sumi,N., Ishii,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A.,  
Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K.,  
Fujiwaka,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M.,  
Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J.,  
Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y.  
RIKEN integrated sequence analysis (RISA) system--384-format  
sequencing pipeline with 384 multicapillary sequencer  
Genome Res. 10 (11), 1757-1771 (2000)  
20530913  
11076861

4 The RIKEN Genome Exploration Research Group Phase II Team and the  
FANTOM Consortium.  
Functional annotation of a full-length mouse cDNA collection  
Nature 409, 685-690 (2001)

5 The FANTOM Consortium and the RIKEN Genome Exploration Research  
Group Phase I & II Team.  
Analysis of the mouse transcriptome based on functional annotation  
of 60,770 full-length cDNAs

TITLE  
JOURNAL  
MEDLINE  
PUBMED

REFERENCE  
AUTHORS  
TITLE  
JOURNAL  
MEDLINE  
PUBMED

JOURNAL  
REFERENCE  
AUTHORS

Nature 420, 563-573 (2002)  
6 (bases 1 to 1583)  
Adachi,J., Aizawa,K., Akimura,T., Arakawa,T., Bono,H., Carninci,P.,  
Fukuda,S., Furuno,M., Hanagaki,T., Hara,A., Hashizume,W.,  
Hayashida,K., Hayatsu,N., Hiramoto,K., Hiraoka,T., Hirozane,T.,  
Hori,F., Imotani,K., Ishii,Y., Itoh,M., Kagawa,I., Kasukawa,T.,  
Kato,H., Kawai,J., Kojima,Y., Kondo,S., Konno,H., Kouda,M.,  
Koya,S., Kurihara,C., Matsuyama,T., Miyazaki,A., Murata,M.,  
Nakamura,M., Nishi,K., Nomura,K., Numazaki,R., Ohno,M., Ohsato,N.,  
Okazaki,Y., Saito,R., Saitoh,H., Sakai,C., Sakai,K., Sakazume,N.,  
Sano,H., Sasaki,D., Shibata,K., Shinagawa,A., Shiraki,T.,  
Sogabe,Y., Tagami,M., Tagawa,A., Takahashi,F., Takaku-Akahira,S.,  
Takeda,Y., Tanaka,T., Tomaru,A., Toya,T., Yasunishi,A.,  
Muramatsu,M. and Hayashizaki,Y.

TITLE  
JOURNAL

Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of  
Physical and Chemical Research (RIKEN), Laboratory for Genome  
Exploration Research Group, RIKEN Genomic Sciences Center (GSC),  
RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama,  
Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp,  
URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,  
Fax:81-45-503-9216)

COMMENT

cDNA library was prepared and sequenced in Mouse Genome  
Encyclopedia Project of Genome Exploration Research Group in Riken  
Genomic Sciences Center and Genome Science Laboratory in RIKEN.  
Division of Experimental Animal Research in Riken contributed to  
prepare mouse tissues.  
Please visit our web site for further details.  
URL:http://genome.gsc.riken.go.jp/  
URL:http://fantom.gsc.riken.go.jp/.

FEATURES

source

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CDS

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polyA\_site  
ORIGIN

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Best Local Similarity 92.5%; Pred. No. 4.1e-105;  
Matches 441; Conservative 0; Mismatches 36; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTTCACCTGTTTTCAGGTCCTTAGCTGGGTGGTGTGCAC 60  
Db 335 ATGCTGTCATGAAGCTGTTTCACCTGTTTTCAGGTCCTTAGCTGGGTGGTGTGCAT 394  
QY 61 TCCCAGGGGGCCCTGTCTGTCTGGGACAACTCAACAGAAATGGAAGTGGTCCCTTTCAAT 120  
Db 395 TCCCAGGGGGCCCTGTCTGTCTGGGACAACTCAACAGAACTGGAAGTGGTCCCTTTCAAC 454  
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Db 455 GAAAGTGTGGGGTGCAGACTACTGTGCGGCCCATGGAGAACTGGTGATCAATCTTTGGATGAA 514

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Db 515 TACCTGATGAGGTGTCTCATATATTAGTCCGTCTCTGTCCTTCTGAGTCGCTGAGT 574

QY 241 GGCTGTGTGGTGACGAGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

Db 575 GGCTGTGTGGTGATGAAGGTCTGCACTGTGTGCCGATAAAGACAGCCCAACATCACTATG 634

QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360

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QY 361 CAGGATGTACTCTGCGAATGCGAGGCTTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420

Db 695 CAGGATGTCTCTGTGAATGCAGACCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 754

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Db 755 ACCAAGGGGAAGAGGAAGAGGAGTAGAAACTACAGACTGAGGAACCCACCCGTGA. 811

RESULT 6

BI905649 936 bp mRNA linear EST 16-OCT-2001

LOCUS 603167660F1 NCI\_CGAP\_Lu33 Mus musculus cDNA clone IMAGE:5255846 5',

DEFINITION mRNA sequence.

ACCESSION BI905649

VERSION BI905649.1 GI:16168209

KEYWORDS EST.

SOURCE Mus musculus (house mouse)

ORGANISM Mus musculus

REFERENCE Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 936)

AUTHORS NIH-MGC <http://mgc.nci.nih.gov/>.

TITLE National Institutes of Health, Mammalian Gene Collection (MGC)

JOURNAL Unpublished (1999)

COMMENT Contact: Robert Strausberg, Ph.D. Email: [cgapbs-r@mail.nih.gov](mailto:cgapbs-r@mail.nih.gov) Tissue Procurement: Gilbert Smith, Ph.D. cDNA Library Preparation: M. Bento Soares, Ph.D., M. Fatima Bonaldo, Ph.D. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: <http://image.llnl.gov> plate: LLAM11646 row: g column: 15 High quality sequence start: 9 High quality sequence stop: 816.

FEATURES

source

1..936

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/clone="IMAGE:5255846"

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/clone\_lib="NCI\_CGAP\_Lu33"

/note="Organ: lung; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site 1: NotI; Site 2: EcoRI; 1st strand cDNA was prepared from mRNA obtained from pooled lung tumors with a Not I - oligo(dT) primer [5' TGTATCAATCTGAAGTGGGAGCGCGCTCTGTCTTTTCTTTT 3'].

Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector. Library went through one round of normalization, and was constructed by Bento Soares and M. Fatima Bonaldo. "

ORIGIN

Query Match 86.5%; Score 412.8; DB 12; Length 936;

Best Local Similarity 92.2%; Pred. No. 2.3e-103;

Matches 435; Conservative 0; Mismatches 37; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTCACTTGTCTTCTTGCAAGTCTAGCTGGTGGTGTGCAC 60

Db 304 ATGCTGGTCATGAAGCTGTCACTTGTCTTCTTACAGTCTAGCTGGTGGTGTGCAT 363

QY 61 TCCAGGGGGCCCTGTCTGTGCGGAACAACACTCAACAGAAATGGAAGTGGTCCCTTTCAAT 120

Db 364 TCCAGGGGGCCCTGTCTGTGCGGAACAACACTCAACAGAAATGGAAGTGGTCCCTTTCAAC 423

QY 121 GAAAGTGTGGGGCCGCGAGCTACTGCCCGCCCAATGGAGAAGCTGGTGTACATTCAGATGAA 180

Db 424 GAAAGTGTGGGGTGGCAGCTACTGTGCGCCCATGGAGAAGCTGGTGTACATCTTTGGATGAA 483

QY 181 CACCTAATGAAGTGTCTCATATATTAGTCCGTCTAGTCCGTCTTCTGAGTCGCTGTAGT 240

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QY 241 GGCTGTGTGGTGACGAGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

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QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360

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QY 361 CAGGATGTACTCTGCGAATGCGAGGCTTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420

Db 664 CAGGATGTGCTCTGTGAATGCAGACCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 723

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Db 724 ACCAAGGGGAAGAGGACGAGGAGTAGAAACTCACAGACTGAGGAACCCCAAC 775

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AK088943

LOCUS

DEFINITION

AK088943 1579 bp mRNA linear HTC 20-SEP-2003

Mus musculus 2 days neonate thymus thymic cells cDNA, RIKEN full-length enriched library, clone:E430032N09 product:placental growth factor, full insert sequence.

ACCESSION AK088943

VERSION AK088943.1 GI:26105001

KEYWORDS HTC; CAP trapper.

SOURCE Mus musculus (house mouse)

ORGANISM Mus musculus

REFERENCE

AUTHORS Carninci,P. and Hayashizaki,Y.

TITLE High-efficiency full-length cDNA cloning

JOURNAL Meth. Enzymol. 303, 19-44 (1999)

MEDLINE 99279253

PUBMED 10349636

AUTHORS Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh,M., Konno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.

TITLE Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes

JOURNAL Genome Res. 10 (10), 1617-1630 (2000)

MEDLINE 20499374

PUBMED 11042159

AUTHORS Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsumai,T., Tashiro,H., Itoh,M., Sumi,N., Ishii,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Fujiwaki,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y.

TITLE  
JOURNAL  
MEDLINE  
PUBMED  
REFERENCE  
AUTHORS

RIKEN integrated sequence analysis (RISA) system--384-format  
sequencing pipeline with 384 multicapillary sequencer  
Genome Res. 10 (11), 1757-1771 (2000)  
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4

The RIKEN Genome Exploration Research Group Phase II Team and the  
FANTOM Consortium.  
Functional annotation of a full-length mouse cDNA collection  
Nature 409, 685-690 (2001)  
5

The FANTOM Consortium and the RIKEN Genome Exploration Research  
Group Phase I & II Team.  
Analysis of the mouse transcriptome based on functional annotation  
of 60,770 full-length cDNAs  
Nature 420, 563-573 (2002)  
6 (bases 1 to 1579)

Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P.,  
Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W.,  
Hayashida, K., Hayatsu, N., Hiramoto, K., Hiraoka, T., Hirozane, T.,  
Hori, F., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kasukawa, T.,  
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Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A.,  
Muramatsu, M. and Hayashizaki, Y.

TITLE  
JOURNAL  
REFERENCE  
AUTHORS

Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of  
Physical and Chemical Research (RIKEN), Laboratory for Genome  
Exploration Research Group, RIKEN Genomic Sciences Center (GSC),  
RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama,  
Kanagawa 230-0045, Japan (E-mail: genome-res@gsc.riken.go.jp,  
URL: http://genome.gsc.riken.go.jp/, Tel: 81-45-503-9222,  
Fax: 81-45-503-9216)

TITLE  
JOURNAL  
REFERENCE  
AUTHORS

CDNA library was prepared and sequenced in Mouse Genome  
Encyclopedia Project of Genome Exploration Research Group in Riken  
Genomic Sciences Center and Genome Science Laboratory in RIKEN.  
Division of Experimental Animal Research in Riken contributed to  
prepare mouse tissues.

TITLE  
JOURNAL

Tissues were provided by Dr. John Todd (Dept. of Medical Genetics  
Wellcome Trust Centre for Molecular Mechanisms in Disease Wellcome  
Trust/MRC building Addenbrookes Hospital Cambridge) whose  
assistance we gratefully acknowledge.  
Please visit our web site for further details.  
URL: http://genome.gsc.riken.go.jp/  
URL: http://fantom.gsc.riken.go.jp/  
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TITLE  
JOURNAL

Direct Submission  
Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of  
Physical and Chemical Research (RIKEN), Laboratory for Genome  
Exploration Research Group, RIKEN Genomic Sciences Center (GSC),  
RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama,  
Kanagawa 230-0045, Japan (E-mail: genome-res@gsc.riken.go.jp,  
URL: http://genome.gsc.riken.go.jp/, Tel: 81-45-503-9222,  
Fax: 81-45-503-9216)

COMMENT

CDNA library was prepared and sequenced in Mouse Genome  
Encyclopedia Project of Genome Exploration Research Group in Riken  
Genomic Sciences Center and Genome Science Laboratory in RIKEN.  
Division of Experimental Animal Research in Riken contributed to  
prepare mouse tissues.

FEATURES  
source

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polyA\_site

ORIGIN

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85.4%; Score 407.4; DB 11; Length 1579;

Best Local Similarity 92.2%; Pred. No. 8.8e-102;  
Matches 440; Conservative 0; Mismatches 36; Indels 1; Gaps 1;

QY 1 ATGCTGGCCATGAGCTGTTCACTTGTCTTTCAGAGTCTAGCTGGGTTGGCTGTGCAC 60  
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AGENCOURT 11276143 NIH\_MGC 135 Mus musculus cDNA clone  
IMAGE:30138619 5', mRNA sequence.

ACCESSION  
VERSION  
KEYWORDS  
SOURCE  
ORGANISM

CB204450  
CB204450.1 GI:28241906  
EST.  
Mus musculus (house mouse)  
Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

REFERENCE  
AUTHORS  
TITLE  
JOURNAL  
COMMENT

NIH-MGC http://mgc.nci.nih.gov/  
National Institutes of Health, Mammalian Gene Collection (MGC)  
Unpublished (1999)  
Contact: Robert Strausberg, Ph.D.  
Email: cgapbs-r@mail.nih.gov  
Tissue Procurement: Dr. David Rowe  
cDNA Library Preparation: Invitrogen Corp  
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Agencourt Bioscience Corporation  
Clone distribution: MGC clone distribution information can be  
found through the I.M.A.G.E. Consortium/LLNL at:  
http://image.llnl.gov

FEATURES  
source

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misc\_feature

polyA\_signal

polyA\_site

ORIGIN

Query Match

85.4%; Score 407.4; DB 11; Length 1579;

Normalized full-length enriched library from pooled mouse embryonic limb, maxilla and mandible, day 12.5, 13.5, 14.5, and 15.5 (size selected for the 0.5-1 kb fragments) Cloned directionally, priming method: Oligo-dT. cDNA enrichment: >1k bp, Average insert size 1.6k bp. Normalization (Cot value): 7.5 kb. Priming sequence: 5'GACTAGTTCTAGATCGGAGCGGCCCT(T)3' Tissue contributed by, David Rowe. Library constructed by ResGen, Invitrogen Corp."

ORIGIN

Query Match 84.9%; Score 405.2; DB 14; Length 932;  
Best Local Similarity 91.8%; Pred. No. 2.9e-101;  
Matches 439; Conservative 0; Mismatches 38; Indels 1; Gaps 1;

QY 1 ATGCTGGCCATGAAGCTGTTCACTGTTCTTGTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60  
|||||  
Db 350 ATGCTGGTCATGAAGCTGTTCACTGTTCTTACAGGTCCTAGCTGGGTTGGCTGTGCAT 409  
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QY 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
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RESULT 9  
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LOCUS  
DEFINITION  
AGENCOURT 10017764 NCI\_CGAP\_Mam2 Mus musculus cDNA clone  
IMAGE:6486814 5', mRNA sequence.  
BQ936933  
BQ936933.1 GI:22352316  
EST.  
Mus musculus (house mouse)  
Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
1 (bases 1 to 933)  
NIH-MGC <http://mgc.nci.nih.gov/>.  
National Institutes of Health, Mammalian Gene Collection (MGC)  
Unpublished (1999)  
Contact: Robert Strausberg, Ph.D.  
Email: [cgapbs-re@mail.nih.gov](mailto:cgapbs-re@mail.nih.gov)  
Tissue Procurement: Gilbert Smith, Ph.D.  
cDNA Library Preparation: Life Technologies, Inc.  
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Agencourt Bioscience Corporation  
Clone distribution: MGC clone distribution information can be  
found through the I.M.A.G.E. Consortium/LLNL at:  
<http://image.llnl.gov>

Plate: LLAM14030 row: m column: 23  
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Site 2: NotI; Cloned unidirectionally. Primer: Oligo dT.  
Library constructed by Life Technologies. Investigator  
providing samples: Gilbert Smith, NIH"

ORIGIN

Query Match 84.9%; Score 405.2; DB 13; Length 933;  
Best Local Similarity 91.8%; Pred. No. 2.9e-101;  
Matches 439; Conservative 0; Mismatches 38; Indels 1; Gaps 1;

QY 1 ATGCTGGCCATGAAGCTGTTCACTGTTCTTGTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60  
Db 317 ATGCTGGTCATGAAGCTGTTCACTGTTCTTACAGGTCCTAGCTGGGTTGGCTGTGCAT 376  
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QY 181 CACCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
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Db 497 TACCCTGATGAGGTGTCTCATATATTCAGTCCGTCCTGTCCTTCTGAGTCGCTGTAGT 556  
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QY 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
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QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
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QY 361 CAGGATGTACTCTGCGAATGCAGGCCCTATTCTGGAGACGACAAAGGAGGAGGAGAA 420  
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Db 677 CAGGATGTCTCTGTGAATGCAGACCTATTCTGGAGACGACAAAGGAGGAGGAGAA 736  
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QY 421 ACCAA-GGGGAAGAGGAAGCAAAAGCAAAACCCCAACAGACTGAGGAACCCACCTGTGA 477  
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Db 737 ACCAAGGGGAAGAGGAAGAGGAGTAGAAACTACAGACTGAGGAACCCACCCGTGA 794  
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RESULT 10  
BI663772  
LOCUS  
DEFINITION  
BI663772 744 bp mRNA linear EST 12-SEP-2001  
603288511F1 NCI\_CGAP\_Mam6 Mus musculus cDNA clone IMAGE:5322603 5',  
mRNA sequence.  
BI663772  
BI663772.1 GI:15578005  
EST.  
Mus musculus (house mouse)  
Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
1 (bases 1 to 744)  
NIH-MGC <http://mgc.nci.nih.gov/>.  
National Institutes of Health, Mammalian Gene Collection (MGC)  
Unpublished (1999)  
Contact: Robert Strausberg, Ph.D.



Email: cgapbs-r@mail.nih.gov  
Tissue Procurement: Jeffrey Green M.D.  
CDNA Library Preparation: Life Technologies, Inc.  
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Incyte Genomics, Inc.  
Clone distribution: MGC clone distribution information can be  
found through the I.M.A.G.E. Consortium/LLNL at:  
<http://image.llnl.gov>  
Plate: LLAM11818 row: e column: 04  
High quality sequence stop: 736.  
Location/Qualifiers  
1. .744  
/organism="Mus musculus"  
/mol\_type="mRNA"  
/strain="FVB/N"  
/db\_xref="taxon:10090"  
/clone="IMAGE:5322603"  
/sex="female, virgin"  
/tissue\_type="infiltrating ductal carcinoma"  
/dev\_stage="5 months"  
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/clone\_lib="NCI\_CGAP Mam6"  
/note="Organ: mammary; Vector: pCMV-SPORT6; Site 1: SalI;  
Site 2: NotI; Cloned unidirectionally. Primer: Oligo dt.  
Library constructed by Life Technologies. Investigator  
providing samples: Jeffrey Green, M.D., NIH"

## ORIGIN

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Query Match      84.4%; Score 402.4; DB 12; Length 744;
Best Local Similarity 92.2%; Pred. No. 1.6e-100;
Matches 435; Conservative 0; Mismatches 36; Indels 1; Gaps 1;

1 ATGCTGGCCATGAAGCTCTTCACTTGCTTCTTTCAGGTCCTAGCTGGGTGGCTGTGCAC 60
|||||
107 ATGCTGGTCATGAAGCTGTTCACTTGCTTCTTACAGGTCTAGCTGGGTGGCTGTGCAT 166

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QY	1	ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGAGGTCCTAGCTGGTTCGCTGTGCAC	60
Db	107	ATGCTGGTCATGAAGCTGTTCACTTGCTTCTTACAGGTCCTAGCTGGTTCGCTGTGCAT	166
QY	61	TCCACAGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTCAAT	120
Db	167	TCCCA-GGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTCAAC	225
QY	121	GAAGTGTGGGGCCGCAGCTACTCCGGCCCAATGGAGAAGCTGGTGATCATTTGCAGATGAA	180
Db	226	GAAGTGTGGGGTGCAGCTACTGTCGGCCCATGGAGAAGCTGGTGATCATTTGGATGAA	285
QY	181	CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCAATGTGTCTTCTGAGTCGCTGTAGT	240
Db	286	TACCCCTGATGAGGTGTCTCACATATTCAGTCCGTCTGTGTCTTCTGAGTCGCTGTAGT	345
QY	241	GGCTGCTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCAACTCACTATG	300
Db	346	GGCTGCTGTGGTGATGAAGGTCTGCACCTGTGTGCCGATAAAGACAGGCAACATCACTATG	405
QY	301	CAGATCTTAAAGATTCCCCCCTAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT	360
Db	406	CAGATCTTGAAGATTCCCCCCTAATCGGGATCCACATTTCTATGTGGAGATGACATTTTCT	465
QY	361	CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAGGCAGAAAAGGAGGAAA	420
Db	466	CAGGATGTGCTCTGTGAATGCAGACCTATTCTGGAGACGACAAGGCAGAAAAGGAGGAAA	525
QY	421	ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCCAAC	472
Db	526	ACCAAGGGGAAGAGGAAGAGGAGTAGAAACTCACAGACTGAGGAACCCCAAC	577

RESULT 11  
AI272466

LOCUS	AI272466	455 bp	mRNA	linear	EST 18-NOV-1998
DEFINITION	uk06c06.y1 Schiller mouse MAC13 Mus musculus cDNA clone				
	IMAGE:1958602 5' similar to gb:X80171 M.musculus PLGF mRNA (MOUSE); mRNA sequence.				

ACCESSION  
VERSION

```

KEYWORDS
SOURCE      Mus musculus (house mouse)
ORGANISM
REFERENCE
AUTHORS     Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T.,
            Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M.,
            Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B.,
            Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
            Waterston,R.
TITLE       The WashU-HHMI Mouse EST Project
JOURNAL
COMMENT     Unpublished (1996)
            Contact: Marra M/Mouse EST Project
            WashU-HHMI Mouse EST Project
            Washington University School of Medicinep
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: mouseest@watson.wustl.edu
            This clone is available royalty-free through LLNL ; contact the
            IMAGE Consortium (info@image.llnl.gov) for further information.
            MGI:984942
Seq primer: Primer name ambiguous
High quality sequence stop: 429.
FEATURES
source      1. .455
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            /mol_type="mRNA"
            /db_xref="taxon:10090"
            /clone="IMAGE:1958602"
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            /cell_line="colon cancer cell line MAC13"
            /lab_host="SOLR"
            /clone_lib="Schiller mouse MAC13"
            /note="Vector: pBluescript SK- (Stratagene); Site_1:
            EcoRI; Site_2: XhoI; Double-stranded cDNA was prepared
            from cell line MAC13 using primer
            5'-GAGAGAGAGAGAGAGAGAACTAGTCTGAGT(18)-3'. An EcoRI
            adaptor was used on the 5' end of the cDNA as follows:
            5'-AATTCGGCACGAG-3'. The library was size-selected and
            went through one round of amplification. Average insert
            size is 1.7 kb, with a range from 0.4-12 kb. This library
            was constructed by Dr. Martin Schiller (Johns Hopkins
            University)."

```

## ORIGIN

Query Match	76.4%;	Score 364.6;	DB 9;	Length 455;
Best Local Similarity	92.9%;	Pred. No. 4e-90;		
Matches 382;	Conservative	0;	Mismatches 29;	Indels 0;
			Gaps	0;
Qy	1	ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTCGAGGTCTAGCTGGTTCGGTTCGTGAC	60	
Db	45	ATGCTGGTCATGAAGCTGTTCACTTGCTTCTTCACAGGTCTAGCTGGTTCGGTTCGTGAC	104	
Qy	61	TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTCCCTTTCAAT	120	
Db	105	TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTCCCTTTCAAC	164	
Qy	121	GAAGTGTGGGGCCGAGCTACTGCCGGCCAAATGGAGAAGCTGGTGACATTCGACATGAA	180	
Db	165	GAAGTGTGGGGTCGCAGCTACTGTCGGCCCATGGAGAAGCTGGTGACATCTTGGATGAA	224	
Qy	181	CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCCTTCAGTCCGTGTAGT	240	
Db	225	TACCCTGATGAGGTGTCTCACATATTCAGTCCGTCCTGTGTCCTCCTGAGTCGTGTAGT	284	
Qy	241	GGTGTCTGGTGCAGAGGTCTGCACCTGTGTGSCGCTAAAGACAGCCACATCACTATG	300	
Db	285	GGTGTCTGGTGTATGAAGGTCTGCACCTGTGTGCCGATAAAGACAGCCACATCACTATG	344	
Qy	301	CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT	360	

Db 345 CAGATCTTGAAGATTCCCCCAATCGGGATCCACATTTCTATGTGGAGATGACATTTCT 404

QY 361 CAGGATGTACTCTGCGAATGCGAGGCTTATTCTGGAGACGACAAAGGCAGAA 411

Db 405 CAGGATGTGCTCTGTGAATGCGAGACCTATTCTGGAGACGACAAAGGCAGAA 455

RESULT 12

BI685632 759 bp mRNA linear EST 18-SEP-2001

LOCUS 603309146F1 NCI\_CGAP\_Mam6 Mus musculus cDNA clone IMAGE:5345050 5', mRNA sequence.

DEFINITION BI685632

ACCESSION BI685632

VERSION BI685632.1 GI:15648260

KEYWORDS EST.

SOURCE Mus musculus (house mouse)

ORGANISM Mus musculus

REFERENCE 1 (bases 1 to 759)

AUTHORS NIH-MGC <http://mgc.nci.nih.gov/>.

TITLE National Institutes of Health, Mammalian Gene Collection (MGC)

JOURNAL Unpublished (1999)

COMMENT Contact: Robert Strausberg, Ph.D.  
Email: [cgapbs-remail.nih.gov](mailto:cgapbs-remail.nih.gov)  
Tissue Procurement: Jeffrey Green M.D.  
cDNA Library Preparation: Life Technologies, Inc.  
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Incyte Genomics, Inc.  
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: <http://image.llnl.gov>  
Plate: LLAM11876 Row: 1 Column: 11  
High quality sequence stop: 756.

FEATURES

Location/Qualifiers

1..759

/organism="Mus musculus"

/mol\_type="mRNA"

/strain="FVB/N"

/db\_xref="taxon:10090"

/clone="IMAGE:5345050"

/sex="female, virgin"

/tissue\_type="infiltrating ductal carcinoma"

/dev\_stage="5 months"

/lab\_host="DH10B"

/clone\_lib="NCI\_CGAP Mam6"

/note="Organ: mammary; Vector: pCMV-SPORT6; Site 1: SalI; Site 2: NotI; Cloned unidirectionally. Primer: Oligo dt. Library constructed by Life Technologies. Investigator providing samples: Jeffrey Green, M.D., NIH"

ORIGIN

Query Match 75.8%; Score 361.8; DB 12; Length 759;

Best Local Similarity 92.2%; Pred. No. 2.9e-89;

Matches 392; Conservative 0; Mismatches 32; Indels 1; Gaps 1;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCGAGGTCCTAGCTGGGTGGCTGTGCAC 60

Db 335 ATGCTGGTCATGAAGCTGTTCACTTGCTTCTTACAGGTCCTAGCTGGGTGGCTGTGCAT 394

QY 61 TCCAGGGGGCCCTGCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGCTTTCAAT 120

Db 395 TCCAGGGGGCCCTGCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGCTTTCAAC 454

QY 121 GAAGTGTGGGGCCGCGAGCTACTGCGGGCCCAATGGAGAAGCTGGTGATACATTCAGATGAA 180

Db 455 GAAGTGTGGGTCCGAGCTACTGTCGGCCCATGGAGAAGCTGGTGATACATTCAGATGAA 514

QY 181 CACCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240

Db 515 TACCCTGATGAGGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 574

QY 241 GGCTGCTGTGGTGACGAGGCTGTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

Db 575 GGCTGCTGTGGTGATGAAGTCTGCACTGTGTGCCGATAAAGACAGCCCAACATCACTATG 634

QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGT-GGAGATGACATTC 359

Db 635 CAGATCTTGAAGATTCCCCCAATCGGGATCCACATTTCTATGTGGGAGATGACATTTTC 694

QY 360 TCAGGATGTACTCTGCGAATGCGAGGCTTATTCTGGAGACGACAAAGGCAGAAAGGAGGAA 419

Db 695 TCAGGATGTGCTCTGTGAATGCGAGACCTATTCTGGAGACGACCAAGGCGAAAGGAGGAA 754

QY 420 AACCA 424

Db 755 AACCA 759

RESULT 13

BI790853 489 bp mRNA linear EST 12-MAR-2002

LOCUS id09hi0.y1 Melton Normalized Mixed Mouse Pancreas 1 N1-MMS1 Mus musculus cDNA clone IMAGE:5662723 5' similar to SW:PLGF\_MOUSE

DEFINITION P49764 PLACENTA GROWTH FACTOR PRECURSOR ; mRNA sequence.

ACCESSION BI790853

VERSION BI790853.1 GI:15818578

KEYWORDS EST.

SOURCE Mus musculus (house mouse)

ORGANISM Mus musculus

REFERENCE 1 (bases 1 to 489)

AUTHORS Melton, D., Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K., Lemishka, I., Searce, M., Brestelli, J., Gradwohl, G., Clifton, S., Hillier, L., Marra, M., Pape, D., Wylie, T., Martin, J., Blistain, A., Schmitt, A., Theising, B., Ritter, E., Ronko, I., Bennett, J., Cardenas, M., Gibbons, M., McCann, R., Cole, R., Tsagareishvili, R., Williams, T., Jackson, Y. and Bowers, Y.

TITLE Endocrine Pancreas Consortium

JOURNAL Unpublished (2000)

COMMENT Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi Inoue  
Endocrine Pancreas Consortium  
Harvard University, Howard Hughes Medical Institute  
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge, MA 02138  
Tel: 617-495-1812  
Fax: 617-495-8557  
Email: [dmelton@biohp.harvard.edu](mailto:dmelton@biohp.harvard.edu)  
Library was constructed by Dr. Douglas Melton DNA sequencing by: Washington University Genome Sequencing Center For information on obtaining a clone please contact: Juliana Brown ([brown@fas.harvard.edu](mailto:brown@fas.harvard.edu))  
MGI:1949049 This sequence now available from the IMAGE consortium, for clone orders contact: [info@image.llnl.gov](mailto:info@image.llnl.gov)  
Seq primer: -40RP from Gibco  
High quality sequence stop: 429.

FEATURES

Location/Qualifiers

1..489

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/mol\_type="mRNA"

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/clone="IMAGE:5662723"

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/dev\_stage="Embryonic day 10.5, E12.5, E16.5, newborn, adult, mixed"

/lab\_host="DH10B"

/clone\_lib="Melton Normalized Mixed Mouse Pancreas 1 N1-MMS1"

/note="Vector: pSPORT1; Site 1: Not I; Site 2: Sal I; Five libraries representing E10.5/12.5 pancreatic bud, E16.5 pancreas, newborn pancreas, adult pancreas, and adult islets of Langerhans were separately constructed using SuperScript Plasmid Library kit (Life Technologies). cDNA

\_\_\_\_\_

100



Tissue Procurement: Lothar Hennighausen Ph.D., Chu-Xia Deng Ph.D.  
cDNA Library Preparation: Life Technologies, Inc.  
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
DNA Sequencing by: Incyte Genomics, Inc.  
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:  
<http://image.llnl.gov>  
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/clone\_lib="NCI CGAP Mam3"  
/note="Organ: mammary; Vector: pCMV-SPORT6; Site 1: SalI; Site 2: NotI; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigators providing samples: Lothar Hennighausen/Chu-Xia Deng, NIH Reference for transgenic model: Xu et al., Nature Genetics 22, 37-43 (1999)."

FEATURES  
source

ORIGIN

Query Match	75.2%;	Score 358.8;	DB 12;	Length 908;
Best Local Similarity	90.0%;	Pred. No. 2.1e-88;		
Matches 430;	Conservative 0;	Mismatches 42;	Indels 6;	Gaps 4;
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QY	121	GAAGTGTGGGGCCGAGCTACTGCCGGCCCAATGGAGAAGCTGGTGACATTCAGATGAA	180	
Db	434	GAAGTGTGGGGTCCGAGCTACTGTCCGGCCCATGGAGAAGCTGGTGACATTCAGATGAA	493	
QY	181	CACCTAATGAAGTGTCTCATATATTCACTCCGTCATGTGTCTTCTGAGTCGCTGTAGT	240	
Db	494	TACCTGTATGAGGTGTCTCATATATTCACTCCGTCATGTGTCTTCTGAGTCGCTGTAGT	553	
QY	241	GGCTGTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG	300	
Db	554	GGCTGTGTGGTGATGAAGGTCTGCACCTGTGTGGCGATAAAGACAGCCCAACATCACTATG	613	
QY	301	CAGATCTTAAAG-ATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTC	359	
Db	614	CAGATCTTGAAGAAATCCCCCAATCGGGATCCACATTCCTATGTGGAGATGACATTTTC	673	
QY	360	TCAGGATG-TACTCTGCGAATGCAGGCCCTATTCTGGAGACGACAAAGG--CAGAAAGGAG	416	
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QY	417	GAACAACCAAGGGGAAGA--GGAAGCAAAGCAAAACCCACAGACTGAGGAACCCACC	472	
Db	734	GAACAACCAAGGGGAAGAGGAAGACGGAGTAGAACTCACAGACTGAGGAACCCACC	791	

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GenCore version 5.1.6  
Copyright (c) 1993 - 2004 Compugen Ltd.

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4136.118 Million cell updates/sec

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Searched: 682709 seqs, 277475446 residues

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Maximum Match 100%  
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result NO.	Score	Query Match	Length	DB ID	Description
1	477	100.0	477	3	US-08-586-039B-38
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3	414	86.8	417	3	US-08-586-039B-36
4	414	86.8	417	4	US-09-699-769-36
5	230.2	48.3	513	3	US-08-586-039B-44
6	230.2	48.3	513	4	US-09-699-769-44
7	229.8	48.2	465	3	US-08-586-039B-40
8	229.8	48.2	465	4	US-09-699-769-40
9	213.6	44.8	1645	2	US-08-039-297B-1
10	213.2	44.7	450	3	US-08-586-039B-46
11	213.2	44.7	450	4	US-09-699-769-46
12	108.8	22.8	677	3	US-08-718-904-3
13	108.8	22.8	677	4	US-09-449-249-3
14	108.8	22.8	677	5	PCT-US95-10973A-27
15	108.8	22.8	728	3	US-08-718-904-4
16	108.8	22.8	728	4	US-09-449-249-4
17	108.8	22.8	728	5	PCT-US95-10973A-28
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29	107.2	22.5	648	3	US-08-586-039B-48	Sequence 48, Appl
30	107.2	22.5	648	4	US-09-699-769-48	Sequence 48, Appl
31	107.2	22.5	665	4	US-09-244-583-29	Sequence 29, Appl
32	107.2	22.5	699	4	US-09-392-932-10	Sequence 10, Appl
33	107.2	22.5	699	4	US-09-574-708A-9	Sequence 9, Appli
34	107.2	22.5	699	4	US-09-392-931-9	Sequence 9, Appli
35	107.2	22.5	1195	6	5240848-6	Patent No. 5240848
36	106	22.2	649	3	US-08-586-039B-34	Sequence 34, Appl
37	106	22.2	649	4	US-09-699-769-34	Sequence 34, Appl
38	105.6	22.1	495	4	US-09-244-583-25	Sequence 25, Appl
39	105.6	22.1	627	4	US-09-244-583-27	Sequence 27, Appl
40	105.6	22.1	649	4	US-09-519-476-1	Sequence 1, Appli
41	105.2	22.1	444	4	US-09-392-932-6	Sequence 6, Appli
42	105.2	22.1	444	4	US-09-574-708A-1	Sequence 1, Appli
43	105.2	22.1	444	4	US-09-392-931-1	Sequence 1, Appli
44	105.2	22.1	456	5	PCT-US95-10973A-88	Sequence 88, Appl
45	105.2	22.1	467	5	PCT-US95-10973A-86	Sequence 86, Appl

ALIGNMENTS

RESULT 1  
US-08-586-039B-38  
; Sequence 38, Application US/08586039B  
; Patent No. 6140073  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
; TITLE OF INVENTION: SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/586,039B  
; FILING DATE: 16-JAN-1996  
; CLASSIFICATION:  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 08/124,259  
; FILING DATE: 20-SEP-1993  
; APPLICATION NUMBER: 07/676,436  
; FILING DATE: 28-MAR-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hand, J. Mark  
; REGISTRATION NUMBER: 36,545  
; REFERENCE/DOCKET NUMBER: 18361DA  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (908) 594-3905  
; TELEFAX: (908) 594-4720  
; INFORMATION FOR SEQ ID NO: 38:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 477 base pairs  
; TYPE: nucleic acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: DNA (genomic)  
US-08-586-039B-38

Query Match 100.0%; Score 477; DB 3; Length 477;  
Best Local Similarity 100.0%; Pred. No. 9.8e-149;  
Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;



QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGCTGGTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGCTGGTGGCTGTGCAC 60  
QY 61 TCCAGGGGCCCCCTGCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
Db 61 TCCAGGGGCCCCCTGCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
QY 121 GAAGTGTGGGCGCGCAGCTACTGCGGCCCAATGGAGAAGCTGGTGTACATTGCAGATGAA 180  
Db 121 GAAGTGTGGGCGCGCAGCTACTGCGGCCCAATGGAGAAGCTGGTGTACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGCTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGCTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCTCCCAATCGGATCCACATTCCTACGTGGAGATGACATTCCTCT 360  
Db 301 CAGATCTTAAAGATTCCTCCCAATCGGATCCACATTCCTACGTGGAGATGACATTCCTCT 360  
QY 361 CAGGATGTACTCTGCGAATCGAGGCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
Db 361 CAGGATGTACTCTGCGAATCGAGGCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477

RESULT 2

US-09-699-769-38  
; Sequence 38, Application US/09699769  
; Patent No. 6569434  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; C SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/699,769  
; FILING DATE: 30-Oct-2000  
; CLASSIFICATION: <Unknown>  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 08/586,039  
; FILING DATE: 16-JAN-1996  
; APPLICATION NUMBER: 08/124,259  
; FILING DATE: 20-SEP-1993  
; APPLICATION NUMBER: 07/676,436  
; FILING DATE: 28-MAR-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hand, J. Mark  
; REGISTRATION NUMBER: 36,545  
; REFERENCE/DOCKET NUMBER: 18361DB  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (732) 594-3905

TELEFAX: (732) 594-4720  
; INFORMATION FOR SEQ ID NO: 38:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 477 base pairs  
; TYPE: nucleic acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: DNA (genomic)  
; SEQUENCE DESCRIPTION: SEQ ID NO: 38:  
US-09-699-769-38  
Query Match 100.0%; Score 477; DB 4; Length 477;  
Best Local Similarity 100.0%; Pred. No. 9.8e-149;  
Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGCTGGTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGCTGGTGGCTGTGCAC 60  
QY 61 TCCAGGGGCCCCCTGCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
Db 61 TCCAGGGGCCCCCTGCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
QY 121 GAAGTGTGGGCGCGCAGCTACTGCGGCCCAATGGAGAAGCTGGTGTACATTGCAGATGAA 180  
Db 121 GAAGTGTGGGCGCGCAGCTACTGCGGCCCAATGGAGAAGCTGGTGTACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGCTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGCTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCTCCCAATCGGATCCACATTCCTACGTGGAGATGACATTCCTCT 360  
Db 301 CAGATCTTAAAGATTCCTCCCAATCGGATCCACATTCCTACGTGGAGATGACATTCCTCT 360  
QY 361 CAGGATGTACTCTGCGAATCGAGGCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
Db 361 CAGGATGTACTCTGCGAATCGAGGCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCCACTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCCACTGTGA 477

RESULT 3

US-08-586-039B-36  
; Sequence 36, Application US/08586039B  
; Patent No. 6140073  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
; TITLE OF INVENTION: SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/586,039B  
; FILING DATE: 16-JAN-1996

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; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/124,259
; FILING DATE: 20-SEP-1993
; APPLICATION NUMBER: 07/676,436
; FILING DATE: 28-MAR-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Hand, J. Mark
; REGISTRATION NUMBER: 36,545
; REFERENCE/DOCKET NUMBER: 18361DA
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (908) 594-4720
; TELEFAX: (908) 594-4720
; INFORMATION FOR SEQ ID NO: 36:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 417 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
; US-08-586-039B-36

Query Match      86.8%; Score 414; DB 3; Length 417;
Best Local Similarity 100.0%; Pred. No. 8.1e-128;
Matches 414; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60
QY 61 TCCAGGGGCGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120
Db 61 TCCAGGGGCGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120
QY 121 GAAGTGTGGGCGCGCAGCTACTGCGGCGCAATGGAGAGCTGGTGATGACATTCAGATGAA 180
Db 121 GAAGTGTGGGCGCGCAGCTACTGCGGCGCAATGGAGAGCTGGTGATGACATTCAGATGAA 180
QY 181 CACCCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240
Db 181 CACCCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240
QY 241 GGCTGTGTGGTGACGAGGGTGTGACATGCTGGCGCTAAAGACAGCCAAACATCACTATG 300
Db 241 GGCTGTGTGGTGACGAGGGTGTGACATGCTGGCGCTAAAGACAGCCAAACATCACTATG 300
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360
QY 361 CAGGATGTACTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGG 414
Db 361 CAGGATGTACTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGG 414

RESULT 4
US-09-699-769-36
; Sequence 36, Application US/09699769
; Patent No. 6569434
; GENERAL INFORMATION:
; APPLICANT: Bayne, Marvin L.
; APPLICANT: Thomas Jr., Kenneth A.
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR
; NUMBER OF SEQUENCES: 49
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Merck & Co., Inc.
; STREET: 126 E. Lincoln Avenue
; CITY: Rahway
; STATE: New Jersey
; COUNTRY: USA
; ZIP: 07065-0900
; COMPUTER READABLE FORM:

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; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Microsoft Word 6
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/699,769
; FILING DATE: 30-Oct-2000
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/586,039
; FILING DATE: 16-JAN-1996
; APPLICATION NUMBER: 08/124,259
; FILING DATE: 20-SEP-1993
; APPLICATION NUMBER: 07/676,436
; FILING DATE: 28-MAR-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Hand, J. Mark
; REGISTRATION NUMBER: 36,545
; REFERENCE/DOCKET NUMBER: 18361DB
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (732) 594-3905
; TELEFAX: (732) 594-4720
; INFORMATION FOR SEQ ID NO: 36:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 417 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
; SEQUENCE DESCRIPTION: SEQ ID NO: 36:
; US-09-699-769-36

Query Match      86.8%; Score 414; DB 4; Length 417;
Best Local Similarity 100.0%; Pred. No. 8.1e-128;
Matches 414; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60
QY 61 TCCAGGGGCGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGGCTTTCAAT 120
Db 61 TCCAGGGGCGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGGCTTTCAAT 120
QY 121 GAAGTGTGGGCGCGCAGCTACTGCGGCGCAATGGAGAGCTGGTGATGACATTCAGATGAA 180
Db 121 GAAGTGTGGGCGCGCAGCTACTGCGGCGCAATGGAGAGCTGGTGATGACATTCAGATGAA 180
QY 181 CACCCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240
Db 181 CACCCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240
QY 241 GGCTGTGTGGTGACGAGGGTGTGACATGCTGGCGCTAAAGACAGCCAAACATCACTATG 300
Db 241 GGCTGTGTGGTGACGAGGGTGTGACATGCTGGCGCTAAAGACAGCCAAACATCACTATG 300
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360
QY 361 CAGGATGTACTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGG 414
Db 361 CAGGATGTACTCTCGGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGG 414

RESULT 5
US-08-586-039B-44
; Sequence 44, Application US/08586039B
; Patent No. 6140073
; GENERAL INFORMATION:
; APPLICANT: Bayne, Marvin L.
; APPLICANT: Thomas Jr., Kenneth A.
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C

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QY 229 AGTCGCTGTAGTGGCTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCC 288  
Db 241 CTGCGCTGCACCGGCTGCTGGCGGATGAGAACTCTGCACTGTGTGCCGTGGAGACGCC 300  
QY 289 AACATCACTATGCAGATCTTAAAGATTCCCGCAATCGGGATCCACATTCCTACGTGGAG 348  
Db 301 AATGTCACCATGCAGCTCCTAAAGAT---CCGTTCTGGGACCGGCCCTCCTACGTGGAG 357  
QY 349 ATGACATTCTCTCAGGATGTAATCTGCGAATGCAGGCTTATCTGGAGACGACAAAGGCA 408  
Db 358 CTGACGTTCTCTCAGCACGTTCTGCTGCGAATGCCGCTCTGCGGAGAGATGAAGCGG 417  
QY 409 GAAAGGAGGAAACCAAGGGGAGAGGAAAGCAAAAGCAAAACCCACAGA 457  
Db 418 GAAAGGAGGAGACCCCAAGGGCAGGGGAGAGGAGGAGAGAGAGAGAGAGAGAGAGAG 466

RESULT 7

US-08-586-039B-40  
; Sequence 40, Application US/08586039B  
; Patent No. 6140073  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
; TITLE OF INVENTION: SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900

COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Microsoft Word 6  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/586,039B  
FILING DATE: 16-JAN-1996  
CLASSIFICATION:  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/124,259  
FILING DATE: 20-SEP-1993  
APPLICATION NUMBER: 07/676,436  
FILING DATE: 28-MAR-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Hand, J. Mark  
REGISTRATION NUMBER: 36,545  
REFERENCE/DOCKET NUMBER: 18361DA  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (908) 594-3905  
TELEFAX: (908) 594-4720  
INFORMATION FOR SEQ ID NO: 40:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 465 base pairs  
TYPE: nucleic acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: DNA (genomic)  
US-08-586-039B-40

Query Match 48.2%; Score 229.8; DB 3; Length 465;  
Best Local Similarity 72.3%; Pred. No. 1.5e-66;  
Matches 332; Conservative 0; Mismatches 112; Indels 15; Gaps 2;

QY 1 ATGCTGGCCATGAAGCTGTCTTCTTGGAGTCTAGCTGGTGGCTGTGCAC 60  
Db 1 ATGCGGTATGAGGCTGTCTTCTTGGAGTCTAGCTGGTGGCTGTGCAC 60  
QY 61 TCC-----CAGGGGGCCCTGTCTGTCTGGGAACAACACTCAACAGAAATGAAGTG 108

Db 61 GCTGTGCCCCCGCAGCAGTGGGCTTGTCTGCTGGGAACGGCTCTCAGAGGTGGAAGTG 120  
QY 109 GTGCCCTTTCAATGAAGTGTGGGCGCGCAGTACTGCCGCGCAATGGAGAAGCTGGTGTAC 168  
Db 121 GTACCCCTTCCAGGAAGTGTGGGCGCGCAGTACTGCCGCGCGCTGGAGAGGCTGGTGGAC 180  
QY 169 ATTGCAGATGAACACCCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCTTCTG 228  
Db 181 GTCGTGTCCGAGTACCCCGAGCGAGGTGGAGCACATGTTTCAGCCCATCCTGTCTCCCTG 240  
QY 229 AGTCGCTGTAGTGGCTGTGCTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCC 288  
Db 241 CTGCGCTGCACCGGCTGCTGCGCGATGAGAATCTGCACTGTGTGCCGTGGAGACGCGC 300  
QY 289 AACATCACTATGCAGATCTTAAAGATTCCCGCAATCGGGATCCACATTCCTACGTGGAG 348  
Db 301 AATGTCACCATGCAGCTCCTAAAGAT---CCGTTCTGGGACCGGCCCTCCTACGTGGAG 357  
QY 349 ATGACATTCTCTCAGGATGTAATCTGCGAATGCAGGCTTATCTGGAGACGACAAAGGCA 408  
Db 358 CTGACGTTCTCTCAGCACGTTCTGCTGCGAATGCCGCTCTGCGGCGCTCTGCGGAGAGATGAAGCGG 417  
QY 409 GAAAGGAGGAAACCAAGGGGAGAGGAAAGCAAAAGCAAA 447  
Db 418 GAAAGGAGGAGACCCCAAGGGCAGGGGAGAGGAGGAGAGAGAGAGAGAGAGAGAGAGAG 456

RESULT 8

US-09-699-769-40  
; Sequence 40, Application US/09699769  
; Patent No. 6569434  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; TITLE OF INVENTION: C SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Microsoft Word 6  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/09/699,769  
FILING DATE: 30-Oct-2000  
CLASSIFICATION: <Unknown>  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/586,039  
FILING DATE: 16-JAN-1996  
APPLICATION NUMBER: 08/124,259  
FILING DATE: 20-SEP-1993  
APPLICATION NUMBER: 07/676,436  
FILING DATE: 28-MAR-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Hand, J. Mark  
REGISTRATION NUMBER: 36,545  
REFERENCE/DOCKET NUMBER: 18361DB  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (732) 594-3905  
TELEFAX: (732) 594-4720  
INFORMATION FOR SEQ ID NO: 40:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 465 base pairs  
TYPE: nucleic acid  
STRANDEDNESS: single













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; NAME/KEY: CDS
; LOCATION: 13..90
; OTHER INFORMATION: /product= leader sequence encoding DNA
US-08-718-904-4

Query Match      22.8%; Score 108.8; DB 3; Length 728;
Best Local Similarity 59.8%; Pred. No. 3.4e-26;
Matches 201; Conservative 0; Mismatches 132; Indels 3; Gaps 1;

QY 103 GAAGTGGTGCCTTTCAATGAAGTGTGGGGCCGCGAGCTACTGCCGCCCAATGGAGAGCTG 162
Db 127 GAAGTGGTGAAGTTTCATGGATGTCTATCAGCGCAGCTACTGCCATCCAATCGAGACCTG 186

QY 163 GTGTACATTGCAGATGAACACCCCTAATGAAGTGTCTCATATATTTCAGTCCGTCAATGTGTC 222
Db 187 GTGGACATCTTCCAGGAGTACCCTGATGAGATCGAGTACATCTTCAAGCCATCCTGTGTG 246

QY 223 CTTCTGAGTCGCTGTAGTGGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAG 282
Db 247 CCCCTGATGCGATGCCGGGGCTGTGTGCAATGACGAGGGCCTGGAGTGTGTGCCCACTGAG 306

QY 283 ACAGCCCAACATCATAATGCAGATCTTAAAGATTCCTCCCAATCGGGATCCACATTCCTAC 342
Db 307 GAGTCCAACATCACCATGCAGATTATGCGGATCAAACTCACCAAGGCCAGCA--CATA 363

QY 343 GTGGAGATGACATTCTCTCAGGATGTACTCTGCGAATGCAGGCCCTATTCTGGAGACGACA 402
Db 364 GGAGAGATGAGCTTCTTACAGCACAAACAAATGTGAATGCAGACCAAAAGAGATAGAGCA 423

QY 403 AAGGCAGAAAGGAGGAAACCAAGGGGAAGAGGAAG 438
Db 424 AGACAAGAAATAAATCAGTTCGAGGAAGGGAAG 459
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Search completed: September 16, 2004, 21:28:03  
Job time : 65 secs

GenCore version 5.1.6  
Copyright (c) 1993 - 2004 Compugen Ltd.

OM nucleic - nucleic search, using sw model

Run on: September 16, 2004, 17:54:38 ; Search time 2305 Seconds  
(without alignments)  
8969.470 Million cell updates/sec

Title: US-10-071-370A-3  
Perfect score: 477  
Sequence: 1 atgtgtggccatgaagctgtt.....ctgaggaaacccacactgtga 477

Scoring table: IDENTITY NUC  
Gapop 10.0 , Gapext 1.0  
Searched: 3470272 seqs, 21671516995 residues  
Total number of hits satisfying chosen parameters: 6940544

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : GenEmbl:

- 1: gb\_ba:\*
- 2: gb\_htg:\*
- 3: gb\_in:\*
- 4: gb\_om:\*
- 5: gb\_ov:\*
- 6: gb\_pat:\*
- 7: gb\_ph:\*
- 8: gb\_pl:\*
- 9: gb\_pr:\*
- 10: gb\_ro:\*
- 11: gb\_sts:\*
- 12: gb\_sy:\*
- 13: gb\_un:\*
- 14: gb\_vi:\*
- 15: em\_ba:\*
- 16: em\_fun:\*
- 17: em\_hum:\*
- 18: em\_in:\*
- 19: em\_mu:\*
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- 28: em\_un:\*
- 29: em\_vi:\*
- 30: em\_htg\_hum:\*
- 31: em\_htg\_inv:\*
- 32: em\_htg\_other:\*
- 33: em\_htg\_mus:\*
- 34: em\_htg\_pln:\*
- 35: em\_htg\_rod:\*
- 36: em\_htg\_mam:\*
- 37: em\_htg\_vrt:\*
- 38: em\_sy:\*
- 39: em\_htgo\_hum:\*
- 40: em\_htgo\_mus:\*
- 41: em\_htgo\_other:\*

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
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2	477	100.0	477	6	AR338153	AR338153 Sequence
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4	419.4	87.9	1370	10	MMPIGF	X80171 Mus musculu
5	419.4	87.9	1580	10	MMPGF	X96793 M.musculus
6	419.4	87.9	1674	10	BC016567	BC016567 Mus muscu
7	414	86.8	417	6	AR117109	AR117109 Sequence
8	414	86.8	417	6	AR338152	AR338152 Sequence
9	230.2	48.3	513	6	AR117114	AR117114 Sequence
10	230.2	48.3	513	6	AR338157	AR338157 Sequence
11	230.2	48.3	513	9	BT007182	BT007182 Homo sapi
12	230.2	48.3	513	12	BT008273	BT008273 Synthetic
13	230.2	48.3	597	9	S72960	S72960 Homo sapien
14	230.2	48.3	1744	9	BC007789	BC007789 Homo sapi
15	230.2	48.3	1759	9	BC001422	BC001422 Homo sapi
16	230.2	48.3	1780	9	BC007255	BC007255 Homo sapi
17	229.8	48.2	465	6	AR117111	AR117111 Sequence
18	229.8	48.2	465	6	AR338154	AR338154 Sequence
19	213.6	44.8	1645	6	A18411	A18411 PIGF gene s
20	213.6	44.8	1645	6	AX234464	AX234464 Sequence
21	213.6	44.8	1645	6	AX587633	AX587633 Sequence
22	213.6	44.8	1645	6	AX743110	AX743110 Sequence
23	213.6	44.8	1645	9	HSPLGF	X54936 H.sapiens m
24	213.2	44.7	450	6	AR117115	AR117115 Sequence
25	213.2	44.7	450	6	AR338158	AR338158 Sequence
26	213.2	44.7	468	6	BD141689	BD141689 Chimeric
27	203.6	42.7	229131	2	AC114701	AC114701 Rattus no
28	203.6	42.7	248529	2	AC097592	AC097592 Rattus no
29	195.6	41.0	1489	4	AB004272	AB004272 Bos tauru
30	187.6	39.3	450	6	BD141690	BD141690 Chimeric
31	176.8	37.1	167700	2	AC079735	AC079735 Mus muscu
32	176.8	37.1	274695	2	AC127582	AC127582 Mus muscu
33	147.4	30.9	474	6	BD141691	BD141691 Chimeric
34	145.4	30.5	375	4	AY157708	AY157708 Ovis arie
35	129.2	27.1	390	12	ASPLGF	Y09268 Artificial
36	121.8	25.5	474	6	BD141692	BD141692 Chimeric
37	117	24.5	203010	9	AC006530	AC006530 Homo sapi
38	116.4	24.4	495	10	GPIVEGFA	M84230 Guinea pig
39	112.8	23.6	645	4	CFAL33758	AJ133758 Canis fam
40	110.8	23.2	654	4	AF133249	AF133249 Canis fam
41	110.8	23.2	672	4	AF133250	AF133250 Canis fam
42	109.4	22.9	715	5	AB011078	AB011078 Gallus ga
43	108.8	22.8	677	6	AR272184	AR272184 Sequence
44	108.8	22.8	728	6	AR272185	AR272185 Sequence
45	108.8	22.8	3747	6	AX780130	AX780130 Sequence

ALIGNMENTS

RESULT 1					
AR117110					
LOCUS	AR117110	477 bp	DNA	Linear	PAT 16-MAY-2001
DEFINITION	Sequence 38 from patent US 6140073.				
ACCESSION	AR117110				
VERSION	AR117110.1	GI:14098016			
KEYWORDS					
SOURCE	Unknown.				
ORGANISM	Unknown.				
REFERENCE	1 (bases 1 to 477)				
AUTHORS	Bayne,M.L. and Thomas,K.A. Jr.				
TITLE	Vascular endothelial cell growth factor C subunit				
JOURNAL	Patent: US 6140073-A 38 31-OCT-2000;				
FEATURES	Location/Qualifiers				



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source      1. .477
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/mol_type="unassigned DNA"

ORIGIN
Query Match      100.0%; Score 477; DB 6; Length 477;
Best Local Similarity 100.0%; Pred. No. 5.1e-132;
Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      1 ATGCTGGCCATGAAGCTGTTTCACTTGCTTCTTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60
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Db      1 ATGCTGGCCATGAAGCTGTTTCACTTGCTTCTTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60

QY      61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120
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Db      61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120

QY      121 GAAGTGTGGGCGCCGAGCTACTGCCGGCCAAATGGAGAAAGCTGGTGTACATTCAGATGAA 180
      |||
Db      121 GAAGTGTGGGCGCCGAGCTACTGCCGGCCAAATGGAGAAAGCTGGTGTACATTCAGATGAA 180

QY      181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTCTTCTGAGTCGCTGTAGT 240
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Db      181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTCTTCTGAGTCGCTGTAGT 240

QY      241 GGCTGTGTGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300
      |||
Db      241 GGCTGTGTGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

QY      301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360
      |||
Db      301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360

QY      361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420
      |||
Db      361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420

QY      421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477
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Db      421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477

RESULT 2
AR338153
LOCUS      AR338153      477 bp      DNA      linear      PAT 17-AUG-2003
DEFINITION      Sequence 38 from patent US 6569434.
ACCESSION      AR338153
VERSION      AR338153.1      GI:33724885
KEYWORDS
SOURCE      Unknown.
ORGANISM      Unknown.
REFERENCE      1 (bases 1 to 477)
AUTHORS      Bayne,M.L. and Thomas,K.A. Jr.
TITLE      Vascular endothelial cell growth factor C subunit
JOURNAL      Patent: US 6569434-A 38 27-MAY-2003;
FEATURES
source      1. .477
/organism="unknown"
/mol_type="genomic DNA"

ORIGIN
Query Match      100.0%; Score 477; DB 6; Length 477;
Best Local Similarity 100.0%; Pred. No. 5.1e-132;
Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY      1 ATGCTGGCCATGAAGCTGTTTCACTTGCTTCTTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60
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Db      1 ATGCTGGCCATGAAGCTGTTTCACTTGCTTCTTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60

QY      61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120
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Db      61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120
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QY      121 GAAGTGTGGGCGCCGAGCTACTGCCGGCCAAATGGAGAAAGCTGGTGTACATTCAGATGAA 180
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QY      181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTCTTCTGAGTCGCTGTAGT 240
      |||
Db      181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTCTTCTGAGTCGCTGTAGT 240

QY      241 GGCTGTGTGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300
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Db      241 GGCTGTGTGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

QY      301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360
      |||
Db      301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360

QY      361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420
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Db      361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420

QY      421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477
      |||
Db      421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477

RESULT 3
RATPLGF
LOCUS      RATPLGF      665 bp      mRNA      linear      ROD 17-APR-1996
DEFINITION      Rattus norvegicus placenta growth factor (PlGF) mRNA, complete cds.
ACCESSION      L40030
VERSION      L40030.1      GI:1263413
KEYWORDS      angiogenesis; growth factor.
SOURCE      Rattus norvegicus (Norway rat)
ORGANISM      Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
Rattus.
REFERENCE      1 (bases 1 to 665)
AUTHORS      DiSalvo,J., Bayne,M.L., Conn,G., Kwok,P.W., Trivedi,P.G.,
Soderman,D.D., Palisi,T.M., Sullivan,K.A. and Thomas,K.A.
TITLE      Purification and characterization of a naturally occurring vascular
endothelial growth factor.placenta growth factor heterodimer
JOURNAL      J. Biol. Chem. 270 (13), 7717-7723 (1995)
MEDLINE      95221439
PUBMED      7706320
COMMENT      Original
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source      1. .665
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/cell_line="GS-9L"
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<1. .>39
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40. .516
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517. .>665
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3'UTR
ORIGIN
Query Match      99.7%; Score 475.4; DB 10; Length 665;
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Best Local Similarity 99.8%; Pred. No. 1.6e-131; Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 ATGCTGGCCCATGAAGCTGTTCACTTCTTCTTGCGAGTCCCTAGCTGGTTGGCTGTGCAC 60  
Db 40 ATGCTGGCCCATGAAGCTGTTCACTTCTTCTTGCGAGTCCCTAGCTGGTTGGCTGTGCAC 99  
QY 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 100 TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 159  
QY 121 GAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAACTGGTGTACATTGCAGATGAA 180  
Db 160 GAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAACTGGTGTACATTGCAGATGAA 219  
QY 181 CACCTTAATGAAGTGCTCATATATTCAGTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
Db 220 CACCTTAATGAAGTGCTCATATATTCAGTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 279  
QY 241 GGCTGCTGTGGTGACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 280 GGCTGCTGTGGTGACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 339  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCCTACGTGGAGATGACATTCTCT 360  
Db 340 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCCTACGTGGAGATGACATTCTCT 399  
QY 361 CAGGATGTACTCTGCGAATGCGGCCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAA 420  
Db 400 CAGGATGTACTCTGCGAATGCGGCCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAA 459  
QY 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
Db 460 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 516

RESULT 4  
MMP1GF  
LOCUS  
DEFINITION Mus musculus mRNA for placenta growth factor (PLGF gene).  
ACCESSION X80171  
VERSION X80171.1 GI:1063401  
KEYWORDS placenta growth factor; PLGF; PLGF-2 protein.  
SOURCE Mus musculus (house mouse)  
ORGANISM Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
REFERENCE 1 (bases 1 to 1370)  
AUTHORS DiPalma,T., Tucci,M., Russo,G., Maglione,D., Lago,C.T., Romano,A.,  
Sacccone,S., Della Valle,G., De Gregorio,L., Dragani,T.A.,  
Viglietto,G. and Persico,M.G.  
The placenta growth factor gene of the mouse  
Mamm. Genome 7 (1), 6-12 (1996)  
PUBMED 97059399  
8903720  
REFERENCE 2 (bases 1 to 1370)  
AUTHORS Persico,M.G.  
TITLE Direct Submission  
JOURNAL Submitted (14-JUN-1994) M.G. Persico, International Institute of,  
Genetics and Biophysics, Via G Marconi 12, 80125 Naples, ITALY  
FEATURES  
source  
1. .1370  
/organism="Mus musculus"  
/mol\_type="mRNA"  
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119. .595  
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Best Local Similarity 92.5%; Pred. No. 1.1e-114;  
Matches 441; Conservative 0; Mismatches 36; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCCATGAAGCTGTTCACTTCTTCTTGCGAGTCCCTAGCTGGTTGGCTGTGCAC 60  
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QY 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 179 TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTTCAAC 238  
QY 121 GAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAACTGGTGTACATTGCAGATGAA 180  
Db 239 GAAGTGTGGGGTCGCAGCTACTGCGGCCCAATGGAGAACTGGTGTACATCTTGGATGAA 298  
QY 181 CACCTTAATGAAGTGCTCATATATTCAGTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
Db 299 TACCCCGATGAGGTGCTCACATATTCAGTCCGTCTGTCCTTCTGAGTCGCTGTAGT 358  
QY 241 GGCTGCTGTGGTGACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
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QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTCTACGTGGAGATGACATTCTCT 360  
Db 419 CAGATCTTGAAGATTCCCCCAATCGGGATCCACATTCTATGTGGAGATGACATTCTCT 478  
QY 361 CAGGATGTACTCTGCGAATGCGGCCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
Db 479 CAGGATGTGCTCTGTGAATGCAGACTTATCTGGAGACGACAAAGGCAGAAAGGAGGAAA 538  
QY 421 ACCAAGGGGAAGAGGAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
Db 539 ACCAAGGGGAAGAGGAAGAGGAGCAGAAACTCACAGACTGAGGAACCCACCCGTGA 595

RESULT 5  
MMPGF  
LOCUS  
DEFINITION M.musculus mRNA for placenta growth factor.  
ACCESSION X96793  
VERSION X96793.1 GI:1502350  
KEYWORDS placenta growth factor.  
SOURCE Mus musculus (house mouse)  
ORGANISM Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
REFERENCE 1  
AUTHORS Achen,M.G., Gad,J.M., Stacker,S.A. and Wilks,A.F.  
TITLE Placenta growth factor and vascular endothelial growth factor are  
co-expressed during early embryonic development  
JOURNAL Unpublished  
REFERENCE 2 (bases 1 to 1580)  
AUTHORS Achen,M.G.  
TITLE Direct Submission  
JOURNAL Submitted (22-MAR-1996) M.G. Achen, Ludwig Institute for Cancer  
Research, Melbourne Branch, Post Office Box 2008, Royal Melbourne  
Hospital, Victoria 3050, Australia

Location/Qualifiers	
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/db_xref="SWISS-PROT:P49764"	
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ORIGIN	
Query Match	87.9%; Score 419.4; DB 10; Length 1580;
Best Local Similarity	92.5%; Pred. No. 1.1e-114;
Matches 441; Conservative	0; Mismatches 36; Indels 0; Gaps 0;
QY	1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGAGGTCCTAGCTGGGTGGCTGTGCAC 60 
Db	318 ATGCTGGTCATGAAGCTGTTCACTTGCTTCTTACAGGTCTAGCTGGGTGGCTGTGCAT 377 
QY	61 TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTCAAT 120 
Db	378 TCCAGGGGGCCCTGTCTGCTGGGAACAACCTCAACAGAAATGGAAGTGGTGCCTTCAAC 437 
QY	121 GAAGTGTGGGGCCGACGACTACTGCCGGCCAAATGGAGAAAGCTGGTGTACATTGCAGATGAA 180 
Db	438 GAAGTGTGGGGTCCGAGCTACTGTGCGCCCATGGAGAAAGCTGGTGTACATCTTGGATGAA 497 
QY	181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTATGTGTCCTTCTGAGTCGCTGTAGT 240 
Db	498 TACCCTGATGAGGTGCTCACATATTCACTCCGTCTGTGTCCTTCTGAGTCGCTGTAGT 557 
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Db	558 GGCTGCTGTGGTGATGAAGGTCTGCACCTGTGTGCCGATAAAGACAGCCAACATCACTATG 617 
QY	301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360 
Db	618 CAGATCTTGAAGATTCCCCCAATCGGGATCCACATTTCTATGTGGAGATGACATTTTCT 677 
QY	361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420 
Db	678 CAGGATGTGCTCTGTGAATGCAGACCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 737 
QY	421 ACCAAGGGGAAGAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477 
Db	738 ACCAAGGGGAAGAGGAGGAGTAGAAACTCACAGACTGAGGAACCCACCCGTGA 794 
RESULT 6	
BC016567	
LOCUS	
DEFINITION	
Mus musculus placental growth factor, mRNA (cDNA clone MGC:11485 IMAGE:2649577), complete cds.	
ACCESSION	
BC016567	
VERSION	
BC016567.1 GI:16741506	
KEYWORDS	
MGC.	
SOURCE	
Mus musculus (house mouse)	
ORGANISM	
Mus musculus	
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.	
REFERENCE	
1 (bases 1 to 1674)	
AUTHORS	
Straussberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G., Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D., Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K., Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,	

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458. .709					
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/note="PDGF; Region: Platelet-derived and vascular  
endothelial growth factors (PDGF, VEGF) family"  
/db\_xref="CDD:smart00141"

ORIGIN

Query Match 87.9%; Score 419.4; DB 10; Length 1674;  
Best Local Similarity 92.5%; Pred. No. 1.1e-114;  
Matches 441; Conservative 0; Mismatches 36; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTCTTCTGACGGTCCCTAGCTGGTGGCTGTGCAC 60  
Db 323 ATGCTGGTCATGAAGCTGTTCACTTCTTCTACAGGTCCTAGCTGGTGGCTGTGCAT 382

QY 61 TCCCAGGGGCCCTGTCTGTGGGAACAACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 383 TCCCAGGGGCCCTGTCTGTGGGAACAACTCAACAGAAATGGAAGTGGTGCCTTTCAAC 442

QY 121 GAAATGTGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGTGGTGATGAA 180  
Db 443 GAAATGTGGGGTGCAGCTACTGTCGCCCATGGAGAAAGTGGTGATGAA 502

QY 181 CACCCTAATGAAGTGTCTCATATATTTCAGTCCGTCTATGTCCTTCTGAGTCGCTGTAGT 240  
Db 503 TACCCTGATGAGGTGTCTCATATATTTCAGTCCGTCTTCTGAGTCGCTGTAGT 562

QY 241 GGCTGCTGTGGTGACGAGGCTGTGACCTGTGTGGCGCTAAAGACAGCCAACTCACTATG 300  
Db 563 GGCTGCTGTGGTGATGAAGTGTGCACTGTGTGCCGATAAAGACAGCCAACTCACTATG 622

QY 301 CAGATCTTAAAGATTCCCCCCTCAATCGGGATCCACATTCCTACGTGGAGATGACATTCTCT 360  
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QY 361 CAGGATGTACTCTGCGAATGCGGCTATTCTGGAGACGACAAAGCGAGAAAGGAGAA 420  
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QY 421 ACCAAGGGGAAGAGGAAAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
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RESULT 7  
AR117109  
LOCUS AR117109 417 bp DNA linear PAT 16-MAY-2001  
DEFINITION Sequence 36 from patent US 6140073.  
ACCESSION AR117109  
VERSION AR117109.1 GI:14098015  
KEYWORDS  
SOURCE Unknown.  
ORGANISM Unknown.  
REFERENCE 1 (bases 1 to 417)  
AUTHORS Bayne,M.L. and Thomas,K.A. Jr.  
TITLE Vascular endothelial cell growth factor C subunit  
JOURNAL Patent: US 6140073-A 36 31-OCT-2000;  
FEATURES Location/Qualifiers  
source 1. .417  
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ORIGIN

Query Match 86.8%; Score 414; DB 6; Length 417;  
Best Local Similarity 100.0%; Pred. No. 4.3e-113;  
Matches 414; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY 61 TCCCAGGGGCCCTGTCTGTGGGAACAACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
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QY 121 GAAATGTGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGTGGTGATGATGAA 180  
Db 121 GAAATGTGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGTGGTGATGATGAA 180

QY 181 CACCCTAATGAAGTGTCTCATATATTTCAGTCCGTCTATGTCCTTCTGAGTCGCTGTAGT 240  
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QY 241 GGCTGCTGTGGTGACGAGGTCCTGCACTGTGTGGCGCTAAAGACAGCCAACTCACTATG 300  
Db 241 GGCTGCTGTGGTGACGAGGTCCTGCACTGTGTGGCGCTAAAGACAGCCAACTCACTATG 300

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DEFINITION Sequence 36 from patent US 6569434.  
ACCESSION AR338152  
VERSION AR338152.1 GI:33724884  
KEYWORDS  
SOURCE Unknown.  
ORGANISM Unknown.  
REFERENCE 1 (bases 1 to 417)  
AUTHORS Bayne,M.L. and Thomas,K.A. Jr.  
TITLE Vascular endothelial cell growth factor C subunit  
JOURNAL Patent: US 6569434-A 36 27-MAY-2003;  
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ORIGIN

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RESULT 9
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LOCUS AR117114 513 bp DNA linear PAT 16-MAY-2001
DEFINITION Sequence 44 from patent US 6140073.
ACCESSION AR117114
VERSION AR117114.1 GI:14098020
KEYWORDS
SOURCE
ORGANISM Unknown.
REFERENCE 1 (bases 1 to 513)
AUTHORS Bayne,M.L. and Thomas,K.A. Jr.
TITLE Vascular endothelial cell growth factor C subunit
JOURNAL Patent: US 6140073-A 44 31-OCT-2000;
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Best Local Similarity 71.6%; Pred. No. 7.4e-58;
Matches 336; Conservative 0; Mismatches 118; Indels 15; Gaps 2;
QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTCAGAGTCTCTAGCTGGGTGGCTGTGCAC 60
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DEFINITION Sequence 44 from patent US 6569434.
ACCESSION AR338157
VERSION AR338157.1 GI:33724889
KEYWORDS
SOURCE
ORGANISM Unknown.
REFERENCE 1 (bases 1 to 513)
AUTHORS Bayne,M.L. and Thomas,K.A. Jr.
TITLE Vascular endothelial cell growth factor C subunit
JOURNAL Patent: US 6569434-A 44 27-MAY-2003;

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Best Local Similarity 71.6%; Pred. No. 7.4e-58;
Matches 336; Conservative 0; Mismatches 118; Indels 15; Gaps 2;
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BT007182
LOCUS BT007182 513 bp mRNA linear PRI 13-MAY-2003
DEFINITION Homo sapiens placental growth factor, vascular endothelial growth factor-related protein mRNA, complete cds.
ACCESSION BT007182
VERSION BT007182.1 GI:30583202
KEYWORDS FLI_CDNA.
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 513)
AUTHORS Kalnine,N., Chen,X., Rolfs,A., Halleck,A., Hines,L., Eisenstein,S., Koundinya,M., Raphael,J., Moreira,D., Kelley,T., LaBaer,J., Lin,Y., Koundinya,M., Raphael,J., Moreira,D., Kelley,T., LaBaer,J., Lin,Y., Phelan,M. and Farmer,A.
TITLE Cloning of human full-length CDSs in BD Creator (TM) System Donor vector
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 513)
AUTHORS Kalnine,N., Chen,X., Rolfs,A., Halleck,A., Hines,L., Eisenstein,S., Koundinya,M., Raphael,J., Moreira,D., Kelley,T., LaBaer,J., Lin,Y., Phelan,M. and Farmer,A.
TITLE Direct Submission
JOURNAL Submitted (13-MAY-2003) BD Biosciences Clontech, 1020 East Meadow Circle, Palo Alto, CA 94303, USA
COMMENT This CDS clone is a part of a collection of human full length expression clones generated by BD Biosciences Clontech and the Harvard Institute of Proteomics. Each CDS has been cloned in two forms: with and without stop-codon (to allow fusion with C-terminal

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cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)  
 DNA Sequencing by: National Institutes of Health Intramural  
 Sequencing Center (NISC),  
 Gaithersburg, Maryland;  
 Web site: <http://www.nisc.nih.gov/>  
 Contact: nisc\_mgc@nhgri.nih.gov  
 Akhter,N., Ayele,K., Beckstrom-Sternberg,S.M., Benjamin,B.,  
 Blakesley,R.W., Bouffard,G.G., Breen,K., Brinkley,C., Brooks,S.,  
 Dietrich,N.L., Granite,S., Guan,X., Gupta,J., Haghighi,P.,  
 Hansen,N., Ho,S.-L., Karlins,E., Kwong,P., Laric,P., Legaspi,R.,  
 Maduro,Q.L., Masiello,C., Maskeri,B., Mastrian,S.D., McCloskey,J.C.,  
 McDowell,J., Pearson,R., Stantripop,S., Thomas,P.J., Touchman,J.W.,  
 Tsurgeon,C., Vogt,J.L., Walker,M.A., Wetherby,K.D., Wiggins,L.,  
 Young,A., Zhang,L.-H. and Green,E.D.

Clone distribution: MGC clone distribution information can be found  
 through the I.M.A.G.E. Consortium/LLNL at: <http://image.llnl.gov>  
 Series: IRAL Plate: 20 Row: a Column: 15  
 This clone was selected for full length sequencing because it  
 passed the following selection criteria: matched mRNA gi: 20149542.

FEATURES

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RESULT 15

BC001422

LOCUS

DEFINITION

BC001422 1759 bp mRNA linear PRI 04-OCT-2003  
 Homo sapiens placental growth factor, vascular endothelial growth  
 factor-related protein, mRNA (cDNA clone MGC:1683 IMAGE:3139175),  
 complete cds.

ACCESSION

BC001422 GI:33876199

VERSION

BC001422.2

KEYWORDS

MGC.

SOURCE

Homo sapiens (human)

ORGANISM

Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.

1 (bases 1 to 1759)

Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,

Klausner,R.D., Collins,F.S., Wagner,L., Shennen,C.M., Schuler,G.D.,

Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,

Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,

Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,

Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,

Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,

Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,

Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,

McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,

Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,

Villalón,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,

Fahey,J., Helton,E., Kettman,M., Madan,A., Young,A.C., Rodrigues,S.,

Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,

Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,

Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,

Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,

Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.

Generation and initial analysis of more than 15,000 full-length

human and mouse cDNA sequences

Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)

22388257

12477932

2 (bases 1 to 1759)

Strausberg,R.

Direct Submission

Submitted (12-DEC-2000) National Institutes of Health, Mammalian

Gene Collection (MGC), Cancer Genomics Office, National Cancer

Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,

USA

NIH-MGC Project URL: <http://mgc.nci.nih.gov>

On Aug 19, 2003 this sequence version replaced gi:12802997.

Contact: MGC help desk

Email: [cgapbs-r@mail.nih.gov](mailto:cgapbs-r@mail.nih.gov)

Tissue Procurement: ATCC

cDNA Library Preparation: Rubin Laboratory

cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: National Institutes of Health Intramural

Sequencing Center (NISC),

Gaithersburg, Maryland;

Web site: <http://www.nisc.nih.gov/>

Contact: [nisc\\_mgc@nhgri.nih.gov](mailto:nisc_mgc@nhgri.nih.gov)

Akhter,N., Ayele,K., Beckstrom-Sternberg,S.M., Benjamin,B.,



GenCore version 5.1.6  
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OM nucleic - nucleic search, using sw model

Run on: September 16, 2004, 19:32:13 ; Search time 307 Seconds  
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Total number of hits satisfying chosen parameters: 6747726

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Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

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4: geneseqn2001as: \*  
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7: geneseqn2003as: \*  
8: geneseqn2003bs: \*  
9: geneseqn2003cs: \*  
10: geneseqn2004s: \*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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6	475.4	99.7	477	2	AAQ23040		Aaq23040 Encodes V
7	475.4	99.7	477	2	AAV25538		Aav25538 Vascular
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42	210.4	44.1	1645	2	AAQ24268	Aaq24268 Encodes P
43	187.6	39.3	450	6	ABL50281	Abl50281 Human FIG
44	168.4	35.3	475	8	ACH14601	Ach14601 Human adu
45	147.4	30.9	474	6	ABL50282	Abl50282 Human FIG

ALIGNMENTS

RESULT 1  
AAQ28956  
ID AAQ28956 standard; cDNA; 477 BP.  
XX  
AC AAQ28956;  
XX  
DT 25-MAR-2003 (revised)  
DT 25-FEB-1993 (first entry)  
XX  
DE Sequence encoding vascular endothelial cell growth factor VEGF B 158  
DE amino acid residue subunit.  
XX Vascular development; mitogen; blood vessel;  
KW vascular endothelial growth factor; neovascularisation; ss.  
XX  
OS Rattus.  
XX  
FH Key  
FT CDS  
FT  
FT  
XX EP506477-A1.  
XX  
PD 30-SEP-1992.  
XX  
PF 27-MAR-1992; 92EP-00302750.  
XX  
PR 28-MAR-1991; 91US-00676436.  
XX (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Thomas KA;  
XX  
DR WPI; 1992-325745/40.  
DR P-PSDB; AAR27357.  
XX  
PT Vascular endothelial cell growth factor sub-units - which stimulate  
PT vascular endothelial cell growth, used for inducing tissue repair and  
XX growth.  
PS Disclosure; Fig 8; 61pp; English.  
XX  
CC The full length coding region of the B subunit or monomer of VEGF is  
CC determined from four sets of overlapping cDNA clones. Degenerate oligo-  
CC primers based on the amino acid sequences from polypeptide 150 are used  
CC to PCR amplify the central region of the cDNA for VEGF AB,B monomer. A





DT 26-FEB-2001 (first entry)  
 XX Rat VEGF subunit B coding sequence SEQ ID NO: 38.  
 DE Vascular endothelial growth factor; VEGF C subunit; cell division;  
 KW artificial blood vessel; tissue growth; tissue repair; ss.  
 KW  
 XX Rattus sp.  
 OS  
 XX US6140073-A.  
 PN  
 XX  
 PD 31-OCT-2000.  
 XX  
 XX 16-JAN-1996; 96US-00586039.  
 PF  
 XX 28-MAR-1991; 91US-00676436.  
 PR  
 PR 20-SEP-1993; 93US-00124259.  
 XX  
 XX (MERI ) MERCK & CO INC.  
 PA  
 XX Thomas KA, Bayne ML;  
 PI  
 XX WPI; 2001-014858/02.  
 DR P-PSDB; AAB37508.  
 DR  
 XX

QY 421 ACCAAGGGGAAGAGGAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
 |||||  
 Db 421 ACCAAGGGGAAGAGGAGCAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
 |||||  
 RESULT 4  
 ADA25600  
 ID ADA25600 standard; cDNA; 477 BP.  
 XX  
 AC ADA25600;  
 XX  
 DT 20-NOV-2003 (first entry)  
 XX  
 DE Rat cDNA encoding VEGF B 158 amino acid subunit.  
 XX  
 KW Vulnerary; vascular endothelial cell growth;  
 KW vascular endothelial cell growth factor; VEGF; VEGF-A; VEGF-B; VEGF-C;  
 KW mitogen; vascular development; vascular repair; tissue development;  
 KW tissue repair; rat; ss; gene.  
 XX  
 OS Rattus sp.  
 XX  
 PN US6569434-B1.  
 XX  
 PD 27-MAY-2003.  
 XX  
 PF 30-OCT-2000; 2000US-00699769.  
 XX  
 PR 28-MAR-1991; 91US-00676436.  
 PR 20-SEP-1993; 93US-00124259.  
 PR 16-JAN-1996; 96US-00586039.  
 XX  
 PA (MERI ) MERCK & CO INC.  
 XX  
 PI Bayne ML, Thomas KA;  
 XX WPI; 2003-605461/57.  
 DR P-PSDB; ADA25601.  
 XX

PT Human vascular endothelial cell growth factor (VEGF) C subunit DNA and  
 PT protein, useful for promoting vascular development and repair, and for  
 PT promoting tissue repair, especially for treating wounds in mammals.  
 XX  
 PS Example 10; Fig 8; 58pp; English.  
 XX

CC The present invention is concerned with the human vascular endothelial  
 CC growth factor (VEGF) C subunit. VEGF is a vascular endothelial cell  
 CC mitogen and can be used to promote vascular development and repair. The C  
 CC subunit may exist as a homodimer or a heterodimer with the VEGF A or B  
 CC subunit. VEGF can be used in the treatment of wounds of mammals, to cover  
 CC artificial blood vessels with vascular endothelial cells, in the  
 CC production of artificial blood vessels and to induce tissue repair or  
 CC growth

SQ Sequence 477 BP; 123 A; 116 C; 133 G; 105 T; 0 U; 0 Other;

Query Match 100.0%; Score 477; DB 4; Length 477;  
 Best Local Similarity 100.0%; Pred. No. 4.1e-133;  
 Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60  
 |||||  
 Db 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60  
 |||||  
 QY 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
 |||||  
 Db 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
 |||||  
 QY 121 GAAGTGTGGGGCCCGCAGCTACTGCCGGCCCAATGGAGAAAGCTGGTGTACATTGCAGATGAA 180  
 |||||  
 Db 121 GAAGTGTGGGGCCCGCAGCTACTGCCGGCCCAATGGAGAAAGCTGGTGTACATTGCAGATGAA 180  
 |||||  
 QY 181 CACCCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGCTCCTTCTAGTCGCTGTAGT 240  
 |||||  
 Db 181 CACCCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGCTCCTTCTAGTCGCTGTAGT 240  
 |||||  
 QY 241 GGCTGTGTGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCACATCACTATG 300  
 |||||  
 Db 241 GGCTGTGTGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCCACATCACTATG 300  
 |||||  
 QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
 |||||  
 Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
 |||||  
 QY 361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
 |||||  
 Db 361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
 |||||

Stimulating vascular endothelial cell growth comprises administering an amount of a vascular endothelial cell growth factor comprising a first and a second C subunit amino acid sequence.

Example 10; Fig 8; 58pp; English.

The invention relates to stimulating vascular endothelial cell growth comprises administering to a patient an effective vascular endothelial stimulatory amount of a vascular endothelial cell growth factor (VEGF) comprising a first and a second C subunit amino acid sequence, where the first and second subunits comprise a sequence appearing as ADA25607. Also disclosed as new are rat VEGF-A, -B and C subunit cDNAs and proteins. The method and VEGF (a mitogen) are useful in inducing vascular or tissue development and repair. The present sequence encodes a rat VEGF subunit.

Sequence 477 BP; 123 A; 116 C; 133 G; 105 T; 0 U; 0 Other;

Query Match 100.0%; Score 477; DB 8; Length 477;  
 Best Local Similarity 100.0%; Pred. No. 4.1e-133;  
 Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60  
 |||||  
 Db 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCAGGTCCTAGTGGTGGCTGTGCAC 60  
 |||||  
 QY 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
 |||||  
 Db 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
 |||||  
 QY 121 GAAGTGTGGGGCCCGCAGCTACTGCCGGCCCAATGGAGAAAGCTGGTGTACATTGCAGATGAA 180  
 |||||  
 Db 121 GAAGTGTGGGGCCCGCAGCTACTGCCGGCCCAATGGAGAAAGCTGGTGTACATTGCAGATGAA 180  
 |||||

QY 181 CACCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
Db 301 CAGATCTTAAAGATCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCGAGCCCTATTCTGGAGACGACAAAGGCGAGGAGGAAA 420  
Db 361 CAGGATGTACTCTGCGAATGCGAGCCCTATTCTGGAGACGACAAAGGCGAGGAGGAAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477

RESULT 5  
AAQ28952  
ID AAQ28952 standard; cDNA; 477 BP.  
XX  
AC AAQ28952;  
XX  
DT 25-MAR-2003 (revised)  
DT 25-FEB-1993 (first entry)  
XX  
Sequence encoding vascular endothelial cell growth factor VEGF AB subunit B.  
DE  
DE  
DE  
XX  
KW Vascular development; mitogen; blood vessel;  
KW vascular endothelial growth factor; neovascularisation; ss.  
XX  
OS Homo sapiens.

Key Location/Qualifiers  
CDS 1..477  
FT /\*tag= a  
FT  
XX  
EP506477-A1.  
XX  
PD 30-SEP-1992.  
XX  
PF 27-MAR-1992; 92EP-00302750.  
XX  
PR 28-MAR-1991; 91US-00676436.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Thomas KA;  
XX  
WPI; 1992-325745/40.  
DR P-PSDB; AAR27353.  
XX

Vascular endothelial cell growth factor sub-units - which stimulate vascular endothelial cell growth, used for inducing tissue repair and growth.  
XX  
Example; Fig 3; 61pp; English.  
XX  
GS-9L cells were cultured and the VEGF AB subunits were isolated and sequenced. The reduced and carboxymethylated protein eluted as two peaks at approx. 23 and 25 ml that were of approx. equal area as determined by monitoring absorbance at 210 nm. Samples of the two protein subunits isolated after reduction and carboxymethylation were each applied to polybrene-coated glass fiber filters and their N-terminal sequences were determined. The peak of absorbance eluting at approx 25 ml (A subunit) yielded an amino terminal sequence Ala Pro Thr Glu Gly Glu Lys Ala His Glu Val identical to VEGF AA. The peak of absorbance eluting at approx. 23 ml (B subunit) yielded the N-terminal sequence Ala Leu Ser Ala

CC Gly Asn Xaa Ser Thr Glu Met Glu Val Pro Phe Asn Glu Val plus a nearly equal amount of a truncated form of the same sequence missing the first three residues. The missing X residue corresp. to an Asn in the cloned sequence. The A and sum of the B chain peptides were recovered in nearly equal amounts supporting the interpretation that the two peptides combine to form an AB heterodimer in VEGF II. The form of VEGF AB mature A subunit in the heterodimer is the 164 amino acid form. The form of VEGF AB mature B subunit in the heterodimer is the 135 amino acid form derived from the 158 full length amino acid form. (Updated on 25-MAR-2003 to correct PN field.) (Updated on 25-MAR-2003 to correct PD field.)  
XX  
SQ Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;  
Query Match 99.7%; Score 475.4; DB 2; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTCACTTCTTTCAGGTCTCTAGCTGGGTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTTCTTTCAGGTCTCTAGCTGGGTGGCTGTGCAC 60  
QY 61 TCCCAGGGGGCCCTGTCTGTCTGGGAACAACACTCAACAGAAATGGAAGTGGTCTTCAAT 120  
Db 61 TCCCAGGGGGCCCTGTCTGTCTGGGAACAACACTCAACAGAAATGGAAGTGGTCTTCAAT 120  
QY 121 GAAGTGTGGGGCCGCGAGCTACTGCGGCGCAATGGAGAAGCTGGTGTACATGCAGATGAA 180  
Db 121 GAAGTGTGGGGCCGCGAGCTACTGCGGCGCAATGGAGAAGCTGGTGTACATGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTTCCGTCATGTGTCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTTCCGTCATGTGTCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTTCCCCCAATCGGGATCCACATTTCTCTACGTGGAGATGACATTTCTCT 360  
Db 301 CAGATCTTAAAGATTTCCCCCAATCGGGATCCACATTTCTCTACGTGGAGATGACATTTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCGAGCCCTATTCTGGAGACGACAAAGGCGAGGAGAAA 420  
Db 361 CAGGATGTACTCTGCGAATGCGAGCCCTATTCTGGAGACGACAAAGGCGAGGAGAAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477

RESULT 6  
AAQ23040  
ID AAQ23040 standard; DNA; 477 BP.  
XX  
AC AAQ23040;  
XX  
DT 29-JUL-1992 (first entry)  
XX  
DE Encodes VEGF-II 135 amino acid B-subunit.  
XX  
KW VEGF-II; mammalian glioma cell; conditioned medium; heterodimer; homodimer; mitogenesis; vascular repair; blood vessel implant;  
XX alternative splicing; ss.  
OS Rattus.  
XX  
PH Key Location/Qualifiers  
FT sig\_peptide 1..69  
FT /\*tag= a  
FT mat\_peptide 70..474  
FT /\*tag= b  
FT /product= "VEGF-IIB"  
XX



PN EP476983-A.  
XX 25-MAR-1992.  
PD 18-SEP-1991; 91EP-00308489.  
PF 21-SEP-1990; 90US-00586638.  
PR 21-SEP-1990; 90US-00586640.  
XX (MERI ) MERCK & CO INC.  
XX Bayne ML, Conn GL, Thomas KA;  
PI WPI; 1992-098641/13.  
DR P-PSDB; AAR22349.  
XX Vascular endothelial cell growth factor II - used as coating for  
PT artificial blood vessels or to promote tissue repair.  
XX Claim 22; Fig 6; 38pp; English.  
PS The B-subunit of VEGF-II occurs in two forms; the mature protein has  
XX either 135 or 115 amino acids. The two forms are generated by alternative  
CC splicing of the mRNA transcript prior to translation. The full-length  
CC coding region of the B monomer was determined from four sets of  
CC overlapping cDNA clones. PCR primers were designed based on the amino  
CC acid sequence of a leu C peptide (L50) and used to amplify the central  
CC region of the cDNA. A single band migrating at 108bp was gel purified,  
CC digested with SalI, ligated into pGEM3zf(+) and sequenced. The nucleotide  
CC sequence obtained was used to design antisense and sense PCR primers to  
CC amplify the 5' and 3' ends of the cDNA and complete the full-length  
CC sequence. See also AAQ23038 and AAQ23041-Q23059  
XX  
SQ Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;  
  
Query Match 99.7%; Score 475.4; DB 2; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
  
QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCCAGGTCCTAGCTGGTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCCAGGTCCTAGCTGGTGGCTGTGCAC 60  
  
QY 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
Db 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
  
QY 121 GAAGTGTGGGCGCAGCTACTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 180  
Db 121 GAAGTGTGGGCGCAGCTACTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 180  
  
QY 181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
  
QY 241 GGCTGTGTGGTACGAGGGTCTGCACTGTGTCGGCTAAAGACAGCCACATCACTATG 300  
Db 241 GGCTGTGTGGTACGAGGGTCTGCACTGTGTCGGCTAAAGACAGCCACATCACTATG 300  
  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCATTCCTACGTCGAGATGACATTTCTCT 360  
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCATTCCTACGTCGAGATGACATTTCTCT 360  
  
QY 361 CAGGATGTACTCTCGGAATGAGGCTTATTCGGAGACGACAAAGGAGGAGGAGGAAA 420  
Db 361 CAGGATGTACTCTCGGAATGAGGCTTATTCGGAGACGACAAAGGAGGAGGAGGAAA 420  
  
QY 421 ACCAAGGGGAGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGG 477  
Db 421 ACCAAGGGGAGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGG 477  
  
RESULT 7

AAV25538  
ID AAV25538 standard; cDNA; 477 BP.  
XX  
AC AAV25538;  
XX 30-JUL-1998 (first entry)  
DT Vascular endothelial growth factor II B subunit 1 encoding cDNA.  
XX Vascular endothelial cell growth factor; VEGF II; rat; glioma cell;  
KW mitogenesis; blood vessel growth; artificial blood vessel; ss.  
KW Rattus sp.  
XX  
XX Location/Qualifiers  
FH 1.477  
FT /\*tag= a  
FT /product= "VEGF II B subunit"  
XX  
PN US5726152-A.  
XX 10-MAR-1998.  
XX 31-AUG-1994; 94US-00299185.  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
XX (MERI ) MERCK & CO INC.  
XX Conn GL, Thomas KA, Bayne ML;  
PI WPI; 1998-206007/18.  
DR P-PSDB; AAW53646.  
XX Vascular endothelial growth factor proteins - having specified A and B  
PT sub-units.  
XX Claim 1; Fig 6; 46pp; English.  
XX The present sequence encodes a rat vascular endothelial growth factor II  
CC (VEGF II) B subunit. The present invention describes: (1) a mammalian  
CC VEGF II protein comprising an A subunit from AAW53639, AAW53640 or  
CC AAW53641, and a B subunit from AAW53638, AAW53639 or the first 115-135  
CC amino acids of AAW53638; and (2) a mammalian VEGF comprising a  
CC heterodimer or homodimer of B subunits. The growth factor is used for  
CC promoting vascular development and repair and for promoting tissue repair  
XX  
SQ Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;  
  
Query Match 99.7%; Score 475.4; DB 2; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
  
QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCCAGGTCCTAGCTGGTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGCCAGGTCCTAGCTGGTGGCTGTGCAC 60  
  
QY 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
Db 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 120  
  
QY 121 GAAGTGTGGGCGCAGCTACTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 180  
Db 121 GAAGTGTGGGCGCAGCTACTGCTGGGAACAACACTCAACAGAAATGGAAGTGGCTTTCAAT 180  
  
QY 181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
  
QY 241 GGCTGTGTGGTACGAGGGTCTGCACTGTGTCGGCTAAAGACAGCCACATCACTATG 300  
Db 241 GGCTGTGTGGTACGAGGGTCTGCACTGTGTCGGCTAAAGACAGCCACATCACTATG 300

QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCT 360  
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCT 360  
QY 361 CAGGATGTACTCTCGGAATGCGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
Db 361 CAGGATGTACTCTCGGAATGCGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477

RESULT 8  
AAV25536

ID AAV25536 standard; cDNA; 477 BP.

AC AAV25536;

DT 30-JUL-1998 (first entry)

Vascular endothelial growth factor I A subunit 3 encoding cDNA.

Vascular endothelial cell growth factor; VEGF II; rat; glioma cell;  
mitogenesis; blood vessel growth; artificial blood vessel; ss.

OS Rattus sp.

Key Location/Qualifiers

FT CDS 1..477

FT /\*tag= a

FT /product= "VEGF I A subunit"

XX US5726152-A.

PN 10-MAR-1998.

XX 31-AUG-1994; 94US-00299185.

XX 21-SEP-1990; 90US-00586638.

PR 05-JAN-1993; 93US-00000834.

XX (MERI ) MERCK & CO INC.

XX Conn GL, Thomas KA, Bayne ML;

XX WPI; 1998-206007/18.

DR P-PSDB; AAW53644.

XX Vascular endothelial growth factor proteins - having specified A and B sub-units.

XX Example 9; Fig 4; 46pp; English.

CC The present sequence encodes a rat vascular endothelial growth factor I (VEGF I) A subunit. The present invention describes: (1) a mammalian VEGF II protein comprising an A subunit from AAW53639, AAW53640 or AAW53641, and a B subunit from AAW53638, AAW53639 or the first 115-135 amino acids of AAW53638; and (2) a mammalian VEGF comprising a heterodimer or homodimer of B subunits. The growth factor is used for promoting vascular development and repair and for promoting tissue repair

XX Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;

SQ Query Match

Best Local Similarity 99.7%; Score 475.4; DB 2; Length 477;

Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60

Db 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTGAGGTCCTAGCTGGGTTGGCTGTGCAC 60

QY 61 TCCAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTGGTCCCTTTCAAT 120  
Db 61 TCCAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTGGTCCCTTTCAAT 120  
QY 121 GAAGTGTGGGGCCGAGCTACTGCCGGCCAATGGAGAAGCTGGTGATACATTGCAGATGAA 180  
Db 121 GAAGTGTGGGGCCGAGCTACTGCCGGCCAATGGAGAAGCTGGTGATACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTTCAGTCCGTCATGTCTCTTCTGAGTGGTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTTCAGTCCGTCATGTCTCTTCTGAGTGGTGTAGT 240  
QY 241 GGCTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCACATCACTATG 300  
Db 241 GGCTGCTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCT 360  
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCGAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
Db 361 CAGGATGTACTCTGCGAATGCGAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGGAAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCACAGACTGAGGAACCCACCTGTGA 477

RESULT 9

AAF81273

ID AAF81273 standard; cDNA; 477 BP.

XX AAF81273;

DT 23-NOV-2001 (first entry)

XX cDNA encoding the mature 135 amino acid form of VEGF II B subunit.

DE Rat; vascular endothelial growth factor II; VEGF-II; wound healing;  
KW vascular repair; neovascularisation; tissue repair; VEGF II B subunit;  
KW vulnarary; angiogenesis; ss.

XX Rattus sp.

XX US6180107-B1.

PD 30-JAN-2001.

XX 10-MAR-1998; 98US-00038199.

XX 21-SEP-1990; 90US-00586638.

PR 05-JAN-1993; 93US-00000834.

PR 31-AUG-1994; 94US-00299185.

XX (MERI ) MERCK & CO INC.

XX Bayne ML, Conn GL, Thomas KA;

DR WPI; 2001-256064/26.

DR P-PSDB; AAB73964.

XX Stimulating angiogenesis or wound healing through vascular repair,  
PT neovascularization or both, comprises administering mammalian vascular  
PT endothelial growth factor II comprising two different subunits.

XX Example 9; Fig 6; 46pp; English.

CC The invention relates to a method for stimulating angiogenesis or wound  
CC healing through vascular repair, neovascularisation or both. The method  
CC comprises administering to a patient a pharmaceutically effective amount  
CC of mammalian vascular endothelial growth factor II (VEGF-II) comprising a  
CC heterodimer of subunits A and B, or a homodimer of B subunits. VEGF-II is

CC useful for vascular development and repair, promotion of tissue repair,  
CC and the production of artificial vessels. The present sequence encodes  
CC the mature 135 amino acid form of VEGF II B subunit  
XX  
SQ Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;  
Query Match 99.7%; Score 475.4; DB 4; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTCACTGCTTCTTGCAGGTCCTAGCTGGGTTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTGCTTCTTGCAGGTCCTAGCTGGGTTGGCTGTGCAC 60  
QY 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
QY 121 GAAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGCTGGTGATGCAGATGAA 180  
Db 121 GAAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGCTGGTGATGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTTACGTGGAGATGACATTCTCT 360  
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTTACGTGGAGATGACATTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCGAGGCTATTCTGGAGACGACAAAGCGCAGAAAGGAGAA 420  
Db 361 CAGGATGTACTCTGCGAATGCGAGGCTATTCTGGAGACGACAAAGCGCAGAAAGGAGAA 420  
QY 421 ACCAAGGGGAAGAGGAGCAAGCAAAAGCAAAACCCCAAGAGTGGAGAACCCACCTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAGCAAGCAAAAGCAAAACCCCAAGAGTGGAGAACCCACCTGTGA 477

RESULT 10  
AAF81272  
ID AAF81272 standard; cDNA; 477 BP.  
XX  
AC AAF81272;  
XX  
XX  
DT 23-NOV-2001 (first entry)  
XX  
DE Rat VEGF I B subunit cDNA.  
XX  
XX Rat; vascular endothelial growth factor II; VEGF-II; wound healing;  
KW vascular repair; neovascularisation; tissue repair; VEGF I B subunit;  
KW vulnery; angiogenesis; ss.  
XX  
OS Rattus sp.  
XX  
XX US6180107-B1.  
PN  
XX  
XX 30-JAN-2001.  
PD  
XX  
PF 10-MAR-1998; 98US-00038199.  
XX  
XX 21-SEP-1990; 90US-00586638.  
PR  
PR 05-JAN-1993; 93US-00000834..  
PR  
PR 31-AUG-1994; 94US-00299185.  
XX  
XX (MERI ) MERCK & CO INC.  
PA  
XX  
PI Bayne ML, Conn GL, Thomas KA;  
XX

DR WPI; 2001-256064/26.  
DR P-PSDB; AAB73963.  
XX  
PT Stimulating angiogenesis or wound healing through vascular repair,  
PT neovascularization or both, comprises administering mammalian vascular  
PT endothelial growth factor II comprising two different subunits.  
XX  
PS Disclosure; Fig 4I-4K; 46pp; English.  
XX  
CC The invention relates to a method for stimulating angiogenesis or wound  
CC healing through vascular repair, neovascularisation or both. The method  
CC comprises administering to a patient a pharmaceutically effective amount  
CC of mammalian vascular endothelial growth factor II (VEGF-II) comprising a  
CC heterodimer of subunits A and B, or a homodimer of B subunits. VEGF-II is  
CC useful for vascular development and repair, promotion of tissue repair,  
CC and the production of artificial vessels. The present sequence encodes  
CC VEGF I B subunit  
XX  
SQ Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;  
Query Match 99.7%; Score 475.4; DB 4; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTCACTGCTTCTTGCAGGTCCTAGCTGGGTTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTGCTTCTTGCAGGTCCTAGCTGGGTTGGCTGTGCAC 60  
QY 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 61 TCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
QY 121 GAAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGCTGGTGATGCAGATGAA 180  
Db 121 GAAAGTGTGGGGCCCGCAGCTACTGCGGCCCAATGGAGAAAGCTGGTGATGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTTACGTGGAGATGACATTCTCT 360  
Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTTACGTGGAGATGACATTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCGAGGCTATTCTGGAGACGACAAAGCGCAGAAAGGAGAA 420  
Db 361 CAGGATGTACTCTGCGAATGCGAGGCTATTCTGGAGACGACAAAGCGCAGAAAGGAGAA 420  
QY 421 ACCAAGGGGAAGAGGAGCAAGCAAAAGCAAAACCCCAAGAGTGGAGAACCCACCTGTGA 477  
Db 421 ACCAAGGGGAAGAGGAGCAAGCAAAAGCAAAACCCCAAGAGTGGAGAACCCACCTGTGA 477

RESULT 11  
ACA62374  
ID ACA62374 standard; cDNA; 477 BP.  
XX  
AC ACA62374;  
XX  
DT 19-AUG-2003 (first entry)  
XX  
DE cDNA encoding rat VEGF II B subunit.  
XX  
XX Rat; vascular endothelial growth factor II; VEGF II; mitogenesis;  
KW mammalian; vascular endothelial cell growth; tissue repair;  
KW vascular development; vascular repair; blood vessel growth;  
KW neovascularisation; artificial blood vessel; polymeric vessel; vulnery;  
KW B subunit; gene; ss.  
XX



OS Rattus sp.  
XX Key Location/Qualifiers  
FH CDS 1..477  
FT /\*tag= a  
FT /product= "VEGF II B subunit"  
XX  
PN US2003045471-A1.  
XX  
XX  
PD 06-MAR-2003.  
XX  
PF 08-FEB-2002; 2002US-00071370.  
XX  
XX 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
PR 31-AUG-1994; 94US-00299185.  
PR 10-MAR-1998; 98US-00038199.  
PR 07-JUN-1999; 99US-00326879.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
XX Bayne ML, Conn GL, Thomas KA;  
PI  
XX  
DR WPI; 2003-371473/35.  
DR P-PSDB; ABU62005.  
XX  
PT New heterodimeric vascular endothelial growth factor II comprising A and  
PT B subunits encoded by different genes, useful for preparing a composition  
PT for promoting vascular or tissue repair or neovascularization.  
XX  
PS Claim 6; Fig 6; 50pp; English.  
XX  
CC The present invention relates to the isolation of vascular endothelial  
CC growth factor II (VEGF II), and the polynucleotide sequences encoding it.  
CC VEGF II is a heterodimer comprising A and B subunits that are encoded by  
CC different genes. VEGF II stimulates mitogenesis of mammalian vascular  
CC endothelial cells. VEGF II is useful for promoting tissue repair and for  
CC stimulating the growth of vascular endothelial cells. VEGF II can also be  
CC used for stimulating the growth of vascular endothelial cells in a  
CC patient to promote vascular development and repair, or blood vessel  
CC growth (neovascularisation). VEGF II can further be used to produce  
CC artificial blood vessels by treating synthetic polymeric vessels with  
CC VEGF II and implanting into them into a patient. After the implantation  
CC endothelial cells migrate into and grow on the artificial surface. The  
CC present sequence encodes rat VEGF II B subunit  
XX  
SQ Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;

Query Match 99.7%; Score 475.4; DB 7; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTCTGAGGTCCTAGCTGGTGGCTGTGCAC 60  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
1 ATGCTGGCCATGAAGCTGTTCACTTGCTTCTTCTGAGGTCCTAGCTGGTGGCTGTGCAC 60  
QY 61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
61 TCCCAGGGGGCCCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
QY 121 GAAGTGTGGGGCCGAGCTACTCGCGCCAATGGAGAGCTGGTGTACATTGCAGATGAA 180  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
121 GAAGTGTGGGGCCGAGCTACTCGCGCCAATGGAGAGCTGGTGTACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
181 CACCCTAATGAAGTGTCTCATATATTAGTCCGTCATGTGTCCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGCTGTGGTGACGAGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
241 GGCTGCTGTGGTGACGAGGTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTTCTACGTGGAGATGACATTCTCT 360

Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTTCTACGTGGAGATGACATTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGAGGAGGAAA 420  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
361 CAGGATGTACTCTGCGAATGCAGGCCTATTCTGGAGACGACAAAGGAGGAGGAAA 420  
QY 421 ACCAAGGGGAAGAGGAGCAAGCAAAACCCACACACTGAGGAAACCCACCTGTGA 477  
Db ||||||||||||||||||||||||||||||||||||||||||||||||||||||||  
421 ACCAAGGGGAAGAGGAGCAAGCAAAACCCACACACTGAGGAAACCCACCTGTGA 477  
RESULT 12  
ACA62371  
ID ACA62371 standard; cDNA; 477 BP.  
XX  
AC ACA62371;  
XX  
DT 19-AUG-2003 (first entry)  
XX  
DE cDNA encoding rat VEGF I A subunit cleavage product #2.  
XX  
KW Rat; vascular endothelial growth factor II; VEGF II; mitogenesis;  
KW mammalian; vascular endothelial cell growth; tissue repair;  
KW vascular development; vascular repair; blood vessel growth;  
KW neovascularisation; artificial blood vessel; polymeric vessel; vulnery;  
KW A subunit; gene; ss.  
XX  
OS Rattus sp.  
XX  
FH Key Location/Qualifiers  
FT CDS 1..477  
FT /\*tag= a  
FT /product= "VEGF I A subunit cleavage product #2"  
XX  
PN US2003045471-A1.  
XX  
PD 06-MAR-2003.  
XX  
PF 08-FEB-2002; 2002US-00071370.  
XX  
XX 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
PR 31-AUG-1994; 94US-00299185.  
PR 10-MAR-1998; 98US-00038199.  
PR 07-JUN-1999; 99US-00326879.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
XX Bayne ML, Conn GL, Thomas KA;  
PI  
XX  
DR WPI; 2003-371473/35.  
DR P-PSDB; ABU62003.  
XX  
PT New heterodimeric vascular endothelial growth factor II comprising A and  
PT B subunits encoded by different genes, useful for preparing a composition  
PT for promoting vascular or tissue repair or neovascularization.  
XX  
PS Example 9; Fig 4I-4K; 50pp; English.  
XX  
CC The present invention relates to the isolation of vascular endothelial  
CC growth factor II (VEGF II), and the polynucleotide sequences encoding it.  
CC VEGF II is a heterodimer comprising A and B subunits that are encoded by  
CC different genes. VEGF II stimulates mitogenesis of mammalian vascular  
CC endothelial cells. VEGF II is useful for promoting tissue repair and for  
CC stimulating the growth of vascular endothelial cells. VEGF II can also be  
CC used for stimulating the growth of vascular endothelial cells in a  
CC patient to promote vascular development and repair, or blood vessel  
CC growth (neovascularisation). VEGF II can further be used to produce  
CC artificial blood vessels by treating synthetic polymeric vessels with  
CC VEGF II and implanting into them into a patient. After the implantation  
CC endothelial cells migrate into and grow on the artificial surface. The  
CC present sequence encodes rat VEGF I A subunit cleavage product #2

XX Sequence 477 BP; 124 A; 116 C; 132 G; 105 T; 0 U; 0 Other;  
SQ  
Query Match 99.7%; Score 475.4; DB 7; Length 477;  
Best Local Similarity 99.8%; Pred. No. 1.2e-132;  
Matches 476; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
QY 1 ATGCTGGCCATGAAGCTGTTCACTTCTTCTTGGCAGGTCCTAGCTGGTTGGCTGTGCAC 60  
DB 1 ATGCTGGCCATGAAGCTGTTCACTTCTTCTTGGCAGGTCCTAGCTGGTTGGCTGTGCAC 60  
QY 61 TCCAGGGGGCCCTGTCTGTGGGAACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
DB 61 TCCAGGGGGCCCTGTCTGTGGGAACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
QY 121 GAAAGTGTGGGCGCGAGCTACTGCGGCAATGGAGAACTGGTGTACATTGCAGATGAA 180  
DB 121 GAAAGTGTGGGCGCGAGCTACTGCGGCAATGGAGAACTGGTGTACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
DB 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
DB 241 GGCTGTGTGGTACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCCCCAATCGGATCCACATTCCTACCTGGAGATGACATTTCTCT 360  
DB 301 CAGATCTTAAAGATTCCCCCAATCGGATCCACATTCCTACCTGGAGATGACATTTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCAGGCTATTCTGGAGACGACAAAGGAGGAGGAA 420  
DB 361 CAGGATGTACTCTGCGAATGCAGGCTATTCTGGAGACGACAAAGGAGGAGGAA 420  
QY 421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCCAAGAGTGGGACCCCTGTGA 477  
DB 421 ACCAAGGGGAAGAGGAAGCAAAAGCAAAACCCCAAGAGTGGGACCCCTGTGA 477

RESULT 13  
AAQ28955  
ID AAQ28955 standard; cDNA; 417 BP.

XX AAQ28955;  
AC  
XX  
DT 25-MAR-2003 (revised)  
DT 25-FEB-1993 (first entry)

XX Sequence encoding vascular endothelial cell growth factor VEGF B 138  
DE amino acid residue subunit.

XX Vascular development; mitogen; blood vessel;  
KW vascular endothelial growth factor; neovascularisation; ss.

XX Rattus.

XX Key Location/Qualifiers  
FH 1. .417  
FT /\*tag= a

XX EP506477-A1.

XX 30-SEP-1992.

XX 27-MAR-1992; 92EP-00302750.

XX 28-MAR-1991; 91US-00676436.

XX (MERI ) MERCK & CO INC.

XX Bayne ML, Thomas KA;

XX

DR WPI; 1992-325745/40.  
DR P-PSDB; AAR27356.  
XX Vascular endothelial cell growth factor sub-units - which stimulate  
PT vascular endothelial cell growth, used for inducing tissue repair and  
PT growth.  
XX Disclosure; Fig 7; 6lpp; English.  
PS The full length coding region of the B subunit or monomer of VEGF is  
XX determined from four sets of overlapping cDNA clones. Degenerate oligo.  
CC primers based on the amino acid sequences from polypeptide L50 are used  
CC to PCR amplify the central region of the cDNA for VEGF AB,B monomer. A  
CC single band migrating at 108 bp was gel purified, digested with SalI,  
CC ligated into pGEM3zf(+) and sequenced. The nucleotide sequence obtained  
CC (pYG) was used to design antisense and sense PCR primers to amplify the  
CC 5' and 3' ends of the cDNA. These 5' and 3' clones are denoted p5V2 and  
CC p3V2 respectively. The entire base sequence for the 158 amino acid  
CC microheterogeneous B subunit and the 138 amino acid microheterogeneous B  
CC subunit are shown in AAQ28955 and AAQ28956. (Updated on 25-MAR-2003 to  
CC correct PN field.) (Updated on 25-MAR-2003 to correct PD field.)  
XX Sequence 417 BP; 98 A; 100 C; 116 G; 103 T; 0 U; 0 Other;  
SQ

Query Match 86.8%; Score 414; DB 2; Length 417;  
Best Local Similarity 100.0%; Pred. No. 3.4e-114;  
Matches 414; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTCTTGGCAGGTCCTAGCTGGTTGGCTGTGCAC 60  
DB 1 ATGCTGGCCATGAAGCTGTTCACTTCTTGGCAGGTCCTAGCTGGTTGGCTGTGCAC 60

QY 61 TCCAGGGGGCCCTGTCTGTGGGAACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
DB 61 TCCAGGGGGCCCTGTCTGTGGGAACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120

QY 121 GAAAGTGTGGGCGCGAGCTACTGCGGCAATGGAGAACTGGTGTACATTGCAGATGAA 180  
DB 121 GAAAGTGTGGGCGCGAGCTACTGCGGCAATGGAGAACTGGTGTACATTGCAGATGAA 180

QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240  
DB 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCCTTCTGAGTCGCTGTAGT 240

QY 241 GGCTGTGTGGTACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
DB 241 GGCTGTGTGGTACGAGGCTCTGCACTGTGTGGCGCTAAAGACAGCCCAACATCACTATG 300

QY 301 CAGATCTTAAAGATTCCCCCAATCGGATCCACATTCCTACCTGGAGATGACATTTCTCT 360  
DB 301 CAGATCTTAAAGATTCCCCCAATCGGATCCACATTCCTACCTGGAGATGACATTTCTCT 360

QY 361 CAGGATGTACTCTGCGAATGCAGGCTATTCTGGAGACGACAAAGGAGGAGG 414  
DB 361 CAGGATGTACTCTGCGAATGCAGGCTATTCTGGAGACGACAAAGGAGGAGG 414

RESULT 14  
AAZ39829  
ID AAZ39829 standard; cDNA; 417 BP.

XX AAZ39829;

XX 15-FEB-2000 (first entry)

XX VEGFB 138 amino acid residue subunit nucleotide sequence.

XX VEGF; vascular endothelial growth factor; B subunit; tissue growth;  
KW vascular development; artificial blood vessel; repair; human; ss.

XX Homo sapiens.

XX Key Location/Qualifiers

FH





Db 301 CAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTACGTGGAGATGACATTCTCT 360  
QY 361 CAGGATGTACTCTGCGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGG 414  
Db 361 CAGGATGTACTCTGCGAATGCAGGCCCTATTCTGGAGACGACAAAGGCAGAAAGG 414

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GenCore version 5.1.6  
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Perfect score: 477  
Sequence: 1 atgctggccatgaagctgtt.....ctgaggaacccacctgtga 477

Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 3327077 seqs, 2523723180 residues

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Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	477	100.0	477	15	US-10-071-370A-3
2	414	86.8	417	15	US-10-071-370A-5
3	213.6	44.8	1645	9	US-09-795-006A-114
4	213.6	44.8	1645	13	US-10-211-462-114
5	213.6	44.8	1645	15	US-10-262-538-27
6	213.6	44.8	1645	15	US-10-007-926A-103
7	213.6	44.8	1645	15	US-10-101-510-590
8	213.6	44.8	1645	15	US-10-021-660-35
9	213.2	44.7	468	13	US-10-343-825A-11
10	187.6	39.3	450	13	US-10-343-825A-12
11	168.4	35.3	475	10	US-09-918-995-1813
12	147.4	30.9	474	13	US-10-343-825A-13
13	121.8	25.5	474	13	US-10-343-825A-14
14	109	22.9	1104	10	US-09-832-355A-93

15	108.8	22.8	670	16	US-10-294-228-5	Sequence 5, Appli
16	108.8	22.8	677	15	US-10-189-360-3	Sequence 3, Appli
17	108.8	22.8	728	15	US-10-189-360-4	Sequence 4, Appli
18	108.4	22.7	576	16	US-10-419-045-3	Sequence 3, Appli
19	107.6	22.6	645	12	US-10-152-319A-1958	Sequence 1958, Ap
20	107.6	22.6	645	17	US-10-664-705-3	Sequence 3, Appli
21	107.2	22.5	516	9	US-09-812-133-1	Sequence 1, Appli
22	107.2	22.5	516	14	US-10-083-817-7	Sequence 7, Appli
23	107.2	22.5	516	15	US-10-268-447-3	Sequence 3, Appli
24	107.2	22.5	516	15	US-10-319-828-1	Sequence 1, Appli
25	107.2	22.5	516	15	US-10-392-931-3	Sequence 3, Appli
26	107.2	22.5	516	16	US-10-418-529-3	Sequence 3, Appli
27	107.2	22.5	545	15	US-10-293-157-1	Sequence 1, Appli
28	107.2	22.5	642	14	US-10-083-817-9	Sequence 9, Appli
29	107.2	22.5	642	15	US-10-268-447-7	Sequence 7, Appli
30	107.2	22.5	642	15	US-10-392-931-7	Sequence 7, Appli
31	107.2	22.5	642	16	US-10-418-529-7	Sequence 7, Appli
32	107.2	22.5	645	13	US-10-370-291-5	Sequence 5, Appli
33	107.2	22.5	648	16	US-10-294-228-4	Sequence 4, Appli
34	107.2	22.5	665	15	US-10-293-157-29	Sequence 29, Appl
35	107.2	22.5	696	13	US-10-370-291-7	Sequence 7, Appli
36	107.2	22.5	699	14	US-10-083-817-10	Sequence 10, Appl
37	107.2	22.5	699	15	US-10-268-447-9	Sequence 9, Appli
38	107.2	22.5	699	15	US-10-392-931-9	Sequence 9, Appli
39	107.2	22.5	699	16	US-10-418-529-9	Sequence 9, Appli
40	107.2	22.5	785	16	US-10-191-997-114	Sequence 114, App
41	107.2	22.5	815	9	US-09-795-006A-146	Sequence 146, App
42	105.8	22.2	1116	10	US-09-832-355A-88	Sequence 88, Appl
43	105.6	22.1	426	13	US-09-884-050-1	Sequence 1, Appli
44	105.6	22.1	426	15	US-10-298-794-1	Sequence 1, Appli
45	105.6	22.1	495	15	US-10-293-157-25	Sequence 25, Appl

ALIGNMENTS

RESULT 1  
US-10-071-370A-3  
; Sequence 3, Application US/10071370A  
; Publication No. US20030045471A1  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Conn, Gregory L.  
; APPLICANT: Thomas, Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; TITLE OF INVENTION: II  
; FILE REFERENCE: 18199CB  
; CURRENT APPLICATION NUMBER: US/10/071,370A  
; CURRENT FILING DATE: 2002-02-08  
; PRIOR APPLICATION NUMBER: 09/326,879  
; PRIOR FILING DATE: 1999-06-07  
; PRIOR APPLICATION NUMBER: 09/038,199  
; PRIOR FILING DATE: 1998-03-10  
; PRIOR APPLICATION NUMBER: 08/299,185  
; PRIOR FILING DATE: 1994-08-31  
; PRIOR APPLICATION NUMBER: 08/000,834  
; PRIOR FILING DATE: 1993-01-05  
; PRIOR APPLICATION NUMBER: 07/586,638  
; PRIOR FILING DATE: 1990-09-21  
; NUMBER OF SEQ ID NOS: 29  
; SOFTWARE: FastSeq for Windows Version 4.0  
; SEQ ID NO 3  
; LENGTH: 477  
; TYPE: DNA  
; ORGANISM: rat  
; FEATURE:  
; NAME/KEY: CDS  
; LOCATION: (1)....(477)  
US-10-071-370A-3

Query Match 100.0%; Score 477; DB 15; Length 477;  
Best Local Similarity 100.0%; Pred. No. 2.6e-156;  
Matches 477; Conservative 0; Mismatches 0; Indels 0; Gaps 0;



QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGACAGGTCTTAGCTGGTGGCTGTGCAC 60  
Db 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGACAGGTCTTAGCTGGTGGCTGTGCAC 60  
QY 61 TCCCAGGGGCGCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 61 TCCCAGGGGCGCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
QY 121 GAAGTGTGGGCGCGAGCTACTGCCGGCCCAATGGAGAAAGTGGTGTACATTGCAGATGAA 180  
Db 121 GAAGTGTGGGCGCGAGCTACTGCCGGCCCAATGGAGAAAGTGGTGTACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTTCATGTCTCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTTCATGTCTCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTGAAGGGTCTGCACCTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGTGTGGTGAAGGGTCTGCACCTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCTCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
Db 301 CAGATCTTAAAGATTCCTCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
QY 361 CAGGATGTACTCTGGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGAA 420  
Db 361 CAGGATGTACTCTGGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGGAGAA 420  
QY 421 ACCAAGGGGAAGAGCAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477  
Db 421 ACCAAGGGGAAGAGCAAGCAAGCAAAACCCACAGACTGAGGAACCCCACTGTGA 477

RESULT 2

US-10-071-370A-5  
; Sequence 5, Application US/10071370A  
; Publication No. US20030045471A1  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Conn, Gregory L.  
; APPLICANT: Thomas, Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; TITLE OF INVENTION: II  
; FILE REFERENCE: 18199CB  
; CURRENT APPLICATION NUMBER: US/10/071,370A  
; CURRENT FILING DATE: 2002-02-08  
; PRIOR APPLICATION NUMBER: 09/326,879  
; PRIOR FILING DATE: 1999-06-07  
; PRIOR APPLICATION NUMBER: 09/038,199  
; PRIOR FILING DATE: 1998-03-10  
; PRIOR APPLICATION NUMBER: 08/299,185  
; PRIOR FILING DATE: 1994-08-31  
; PRIOR APPLICATION NUMBER: 08/000,834  
; PRIOR FILING DATE: 1993-01-05  
; PRIOR APPLICATION NUMBER: 07/586,638  
; PRIOR FILING DATE: 1990-09-21  
; NUMBER OF SEQ ID NOS: 29  
; SOFTWARE: FastSeq for Windows Version 4.0  
; SEQ ID NO 5  
; LENGTH: 417  
; TYPE: DNA  
; ORGANISM: rat  
; FEATURE:  
; NAME/KEY: CDS  
; LOCATION: (1)...(417)  
US-10-071-370A-5

Query Match 86.8%; Score 414; DB 15; Length 417;  
Best Local Similarity 100.0%; Pred. No. 3e-134;  
Matches 414; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGACAGGTCTTAGCTGGTGGCTGTGCAC 60

Db 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGACAGGTCTTAGCTGGTGGCTGTGCAC 60  
QY 61 TCCCAGGGGCGCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
Db 61 TCCCAGGGGCGCTGTCTGCTGGGAACAACACTCAACAGAAATGGAAGTGGTGCCTTTCAAT 120  
QY 121 GAAGTGTGGGCGCGAGCTACTGCCGGCCCAATGGAGAAAGTGGTGTACATTGCAGATGAA 180  
Db 121 GAAGTGTGGGCGCGAGCTACTGCCGGCCCAATGGAGAAAGTGGTGTACATTGCAGATGAA 180  
QY 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTTCATGTCTCTTCTGAGTCGCTGTAGT 240  
Db 181 CACCCTAATGAAGTGTCTCATATATTCACTCCGTTCATGTCTCTTCTGAGTCGCTGTAGT 240  
QY 241 GGCTGTGTGGTGAAGGGTCTGCACCTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
Db 241 GGCTGTGTGGTGAAGGGTCTGCACCTGTGGCGCTAAAGACAGCCCAACATCACTATG 300  
QY 301 CAGATCTTAAAGATTCCTCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
Db 301 CAGATCTTAAAGATTCCTCCCAATCGGGATCCACATTCCTACGTGGAGATGACATTTCTCT 360  
QY 361 CAGGATGTACTCTGGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGG 414  
Db 361 CAGGATGTACTCTGGAATGCAGGCCTATTCTGGAGACGACAAAGGCAGAAAGG 414

RESULT 3

US-09-795-006A-114  
; Sequence 114, Application US/09795006A  
; Patent No. US20020151680A1  
; GENERAL INFORMATION:  
; APPLICANT: Alitalo et al  
; TITLE OF INVENTION: MATERIALS AND METHODS INVOLVING HYBRID VASCULAR  
; TITLE OF INVENTION: ENDOTHELIAL GROWTH FACTOR DNAs AND PROTEINS  
; FILE REFERENCE: 28967/35977B  
; CURRENT APPLICATION NUMBER: US/09/795,006A  
; CURRENT FILING DATE: 2001-02-26  
; PRIOR APPLICATION NUMBER: US 60/205,331  
; PRIOR FILING DATE: 2000-05-18  
; PRIOR APPLICATION NUMBER: US 60/185,205  
; PRIOR FILING DATE: 2000-02-25  
; NUMBER OF SEQ ID NOS: 175  
; SOFTWARE: PatentIn Ver. 2.0  
; SEQ ID NO 114  
; LENGTH: 1645  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
; FEATURE:  
; NAME/KEY: CDS  
; LOCATION: (322)..(768)  
US-09-795-006A-114

Query Match 44.8%; Score 213.6; DB 9; Length 1645;  
Best Local Similarity 68.3%; Pred. No. 1.1e-63;  
Matches 332; Conservative 0; Mismatches 139; Indels 15; Gaps 2;

QY 1 ATGCTGGCCATGAAGCTGTTCACTTGTCTTCTTGACAGGTCTTAGCTGGTGGCTGTGCAC 60  
Db 322 ATGCCGGTCATGAGGCTGTTCCTTGTCTTCCTGAGCTCCTGGCGGCTGGCGTGCCT 381  
QY 61 TCC-----CAGGGGGCCCTGTCTGTCTGGGAACAACACTCAACAGAAATGGAAGTG 108  
Db 382 GCTGTGCCCCCAGCAGTGGGCTTGTCTGTCTGGGAACGGCTCGTCAGAGGTGGAAGTG 441  
QY 109 GTGCCCTTCAATGAAGTGTGGGCGCGCAGCTACTGCCGGCCAATGGAGAAAGTGGTGTAC 168  
Db 442 GTACCCCTTCCAGGAAGTGTGGGCGCGCAGCTACTGCCGGCGCTGGAGAGGCTGGTGAC 501  
QY 169 ATTGCAGATGAACACCCCTAATGAAGTGTCTCATATATTCAATTCAGTCCGTCATGTCTCTG 228  
Db 502 GTCGTGTCCGAGTACCCAGGAGGTGGAGCACATGTTAGCCCATCTGTGTCTCCCTG 561









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Query Match          39.3%; Score 187.6; DB 13; Length 450;
Best Local Similarity 68.7%; Pred. No. 7.6e-55;
Matches 294; Conservative 0; Mismatches 119; Indels 15; Gaps 2;

QY      1  ATGCTGGCCATGAAGCTGTTCACTTGCTCTTCTTGAGGTCTCTAGCTGGTGTGGCTGTGCAC 60
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      1  ATGCCGGTCATGAGGCTGTTCCCTTGCTTCTTGCGAGCTCTGGCCGGGCTGGCGCTGCCT 60

QY      61  TCC-----CAGGGGCCCTGTCTGTCTGGGAACAACACTCAACAGAAATGGAAGTG 108
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      61  GCTGTGCCCCCCCCAGCAGTGGGCTTGCTGTCTGGGAACGGGTGCTCAGAGGTGGAAGTG 120

QY      109  GTGCCTTTCAATGAAGTGTGGGCGCGCAGCTACTGCCGGCCAATGGAGAAGCTGGTGTAC 168
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      121  GTACCCCTTCCAGGAAGTGTGGGCGCGCAGCTACTGCAACCTAGAGATACTGTTGTTTAT 180

QY      169  ATTGCAGATGAACACCCCTAATGAAGTGTCTCATATATTCACTCCGTCAATGTCTCTTG 228
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      181  TTGGGAGAAGAATATCCAGAAAGCACTAACCTACAATATAATCCCGGTGTGTCTCCCTG 240

QY      229  AGTCGCTGTAGTGGCTGCTGTGGTGACGAGGGTCTGCACCTGTGTGGCGCTAAAGACAGCC 288
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      241  CTGCGCTGCACCGGCTGCTGCGCGATGAGAACTCTGCACCTGTGTGCCGTTGGAGACGGCC 300

QY      289  AACATCACTATGCAGATCTTAAAGATTCCCCCAATCGGGATCCACATTCTACGTGGAG 348
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      301  AATGTCACCATGCAGCTCCTAAAGAT---CCGTTCTGGGACCGGCCCTCTACGTGGAG 357

QY      349  ATGACATTCTCTCAGGATGTACTCTCGAATGCAGGCCCTATTCTGGAGACGACAAAGCA 408
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      358  CTGACGTTCTCTCAGCACGTTCTGCGAATGCCGGCCTCTGCGGAGAGATGAAGCG 417

QY      409  GAAAGGAG 416
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db      418  GAAAGGTG 425

RESULT 11
US-09-918-995-1813
; Sequence 1813, Application US/09918995
; Publication No. US20030073623A1
; GENERAL INFORMATION:
; APPLICANT: Hyseq, Inc.
; TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES OBTAINED
; TITLE OF INVENTION: FROM VARIOUS CDNA LIBRARIES
; FILE REFERENCE: 20411-756
; CURRENT APPLICATION NUMBER: US/09/918,995
; CURRENT FILING DATE: 2001-07-30
; PRIOR APPLICATION NUMBER: US/09/235,076
; PRIOR FILING DATE: 1999-01-20
; NUMBER OF SEQ ID NOS: 38054
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 1813
; LENGTH: 475
; TYPE: DNA
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1)...(475)
; OTHER INFORMATION: n = A,T,C or G
US-09-918-995-1813

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QY	201	TATATT	CAGTCCGT	CATGTG	TCTTCT	TCTGAG	TGCTGT	AGTGGT	GTGCTG	TGGT	GACGAGG	260
Db	149	CATGTT	CAGCCCAT	CTGTGT	CTCCCT	GTGCTG	CGCTGC	ACCGG	TGCTG	CGCGG	CATGAGAA	208
QY	261	TCTGCA	CTGTGT	GGCGCT	TAAAG	ACAGCA	CCAA	CATCA	CTATG	CAGATC	TAAAGAT	320
Db	209	TCTGCA	CTGTGT	GCCGGT	TGGAG	ACGGCA	ATGT	CACCA	TGACG	CTCCT	TAAAGAT	265
QY	321	CAATCG	GGATCC	ACATTC	CTAC	GTGG	AGATG	ACATTC	TCTC	AGGATG	TACTCT	380
Db	266	GTCTGG	GACCGG	CCCTCT	CTAC	AGGAG	CTGAC	GTTC	CTCAG	CACGT	TCTG	325
QY	381	CAGGC	CTATCT	TGGAG	ACGCA	AAAGC	GAGAA	AGGAG	GAAC	CAAGG	GGAAG	440
Db	326	CCAGC	CTCTG	CGGGA	GAAGAT	GAA	CCGGA	AGGTG	CGGCG	ATGCTG	TCCCCG	385
QY	441	AAGCA	AAACCCC	ACAGAC	TGAGG	AACCCC	CACCTG	474				
Db	386	ACCCAC	CCCTTG	GAGG	AGAGAG	ACCCCG	CACCCG	419				

RESULT 12  
 US-10-343-825A-13  
 ; Sequence 13, Application US/10343825A  
 ; Publication No. US20040038341A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: SHIBUYA, Masabumi  
 ; TITLE OF INVENTION: Chimeric Human-Type Vascular Endothelial Cell Growth Factor  
 ; FILE REFERENCE: P23303  
 ; CURRENT APPLICATION NUMBER: US/10/343,825A  
 ; CURRENT FILING DATE: 2003-09-09  
 ; PRIOR APPLICATION NUMBER: PCT/JP01/06856  
 ; PRIOR FILING DATE: 2001-08-09  
 ; NUMBER OF SEQ ID NOS: 15  
 ; SOFTWARE: PatentIn version 3.2  
 ; SEQ ID NO 13  
 ; LENGTH: 474  
 ; TYPE: DNA  
 ; ORGANISM: Artificial  
 ; FEATURE:  
 ; OTHER INFORMATION: Sequence encoding Chimeric VEGF protein  
 US-10-343-825A-13

		Query Match	35.3%;	Score 168.4;	DB 10;	Length 475;
		Best Local Similarity	66.0%;	Pred. No. 4.2e-48;		
		Matches 260;	Conservative	0;	Mismatches 131;	Indels 3; Gaps 1;
QY	81	TGGGAACAAC	TCAACAGAAATGGAAGTGGTGCTTTTC	AATGAAGTGTGGGGCCGCACCTA	140	
Dd	29	TTGGATCGCCT	CGTCCGAGGTGGAAGTGGTACCCCTTCCAGGAAGTGTGGGGCCGCACCTA	88		
QY	141	CTGCCGGCCAAT	GGAAGAAGCTGGTGTACATTGCAGATCAACACCCTAATGAAGTGTCTCA	200		
Dd	89	CTGCCGGGGCGT	GGAAGGCTGGTGGACGTCTTGTCGAGTACCCCAGCAGGTGGAGCA	148		

RESULT 13  
US-10-343-825A-14  
; Sequence 14, Application US/10343825A  
; Publication No. US20040038341A1  
; GENERAL INFORMATION:  
; APPLICANT: SHIBUYA, Masabumi  
; TITLE OF INVENTION: Chimeric Human-Type Vascular Endothelial Cell Growth Factor  
; FILE REFERENCE: P23303  
; CURRENT APPLICATION NUMBER: US/10/343,825A  
; CURRENT FILING DATE: 2003-09-09  
; PRIOR APPLICATION NUMBER: PCT/JP01/06856  
; PRIOR FILING DATE: 2001-08-09  
; NUMBER OF SEQ ID NOS: 15  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 14  
; LENGTH: 474  
; TYPE: DNA  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: Sequence encoding Chimeric VEGF protein  
US-10-343-825A-14

Query Match 25.5%; Score 121.8; DB 13; Length 474;  
Best Local Similarity 65.0%; Pred. No. 9.2e-32;  
Matches 202; Conservative 0; Mismatches 97; Indels 12; Gaps 1;  
QY 1 ATGCTGGCATGAAGCTGTTCACTTGTCTTCTTGCAGGTCTCTAGCTGGGTTGGCTGTGCAC 60  
Db 1 ATGCGGTGATGAGGCTGTTCCCTTGTCTTCTTGTCTGAGCTCTCTGGCGGCTGGCGTGCCT 60  
QY 61 TCC-----CAGGGGGCCCTGTCTGTGGGAACAACCTCAACAGAAATGGAAGTG 108  
Db 61 GCTGTGCCCCCCCCAGCAGTGGGCCCTTGTCTGTGGGAACGGCTCGTCAGAGGTGGAAGTG 120  
QY 109 GTGCCCTTCAATGAAGTGTGGGGCCGCGAGCTACTGCGGGCCCAATGGAGAAGCTGGTGAC 168  
Db 121 GTACCTTCCAGGAAGTGTGGGGCCGCGAGCTACTGCAACCTAGAGATACTGTTGTTAT 180  
QY 169 ATTGCAGATGAACACCCCTAATGAAGTGTCTCATATATTCACTCCGTCATGTCTCTCTG 228  
Db 181 TTGGGAGAGAATATCCAGAAAGCACTAACCCTACAATATAATCCCGGTGTGTCTCCCTG 240  
QY 229 AGTCGCTGTAGTGGCTGTGTGGTGACGAGGCTGTGCACTGTGTGGGCTAAAGACAGCC 288  
Db 241 CTGCGCTGCACCGGCTGTGTGGGCGATGAGAATCTGCACTGTACAGCGGTGAAACAAGA 300  
QY 289 AACATCACTAT 299  
Db 301 AATACAACGTGT 311

RESULT 14  
US-09-832-355A-93  
; Sequence 93, Application US/09832355A  
; Publication No. US20030027751A1  
; GENERAL INFORMATION:  
; APPLICANT: Kovesdi, Imre  
; APPLICANT: Kessler, Paul  
; TITLE OF INVENTION: VEGF FUSION PROTEINS  
; FILE REFERENCE: 205654  
; CURRENT APPLICATION NUMBER: US/09/832,355A  
; CURRENT FILING DATE: 2001-04-10  
; NUMBER OF SEQ ID NOS: 126  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 93  
; LENGTH: 1104  
; TYPE: DNA  
; ORGANISM: Artificial sequence  
; FEATURE:  
; NAME/KEY: misc feature  
; LOCATION: ()..()  
; OTHER INFORMATION: Synthetic  
US-09-832-355A-93

Query Match 22.9%; Score 109; DB 10; Length 1104;  
Best Local Similarity 58.1%; Pred. No. 4.2e-27;  
Matches 212; Conservative 0; Mismatches 150; Indels 3; Gaps 1;  
QY 103 GAAGTGGTGCCTTTCAATGAAGTGTGGGGCCGCGAGCTACTGCGGCGCAATGGAGAAGCTG 162  
Db 115 GAAGTGGTGAAGTTTCAATGGATGTCTATCAGCGCAGCTACTGCGCATCCAATCGAGACCCCTG 174  
QY 163 GTGTACATTCAGATGAACACCCCTAATGAAGTGTCTCATATATTTCAGTCCGTTCATGTGTC 222  
Db 175 GTGGACATCTTCCAGGAGTACCTGTATGAGATCGAGTACATCTTCAAGCCATCCTGTGTG 234  
QY 223 CTTCGTAGTCGCTGTAGTGGCTGTGTGGTGACGAGGGTCTGCACTGTGTGGCGCTAAAG 282  
Db 235 CCCCTGATGCGATGCGGGGGCTGTGCAATGACGAGGGCCCTGGAGTGTGTGCCCACTGAG 294  
QY 283 ACAGCCAAACATCACTATGCAATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTTAC 342  
Db 295 GAGTCCAAACATCACCATGCAATGCGGATCAAACCTCAACAGGCCAGCA---CATA 351  
QY 343 GTGGAGATGACATTTCTCAGGATGTACTCTGCGAATGCGGCTATTCTGGAGACGACA 402  
Db 352 GGAGAGATGAGCTTCTTACAGCACAACAAATGTGAATGACAGCAACAAAGAAAGATAGAGCA 411  
QY 403 AAGGCAGAAAGGAGGAAACCAAGGGGAAGGAGGAAAGCAAAACCAACCCACAGACTGAG 462  
Db 412 AGACRAAGAAATGTGACAAGCCGAGGCGGATCAATGAAGGACCATTCAAAAGACTGTGAG 471  
QY 463 GAACC 467  
Db 472 CAAGC 476

RESULT 15  
US-10-294-228-5  
; Sequence 5, Application US/10294228  
; Publication No. US20040018176A1  
; GENERAL INFORMATION:  
; APPLICANT: Tolentino, Michael J.  
; APPLICANT: Reich, Samuel Jotham  
; TITLE OF INVENTION: Compositions and Methods for siRNA  
; TITLE OF INVENTION: Inhibition of Angiogenesis  
; FILE REFERENCE: 43826-1  
; CURRENT APPLICATION NUMBER: US/10/294,228  
; CURRENT FILING DATE: 2002-11-14  
; PRIOR APPLICATION NUMBER: US 60/398,417  
; PRIOR FILING DATE: 2002-07-24  
; NUMBER OF SEQ ID NOS: 80  
; SOFTWARE: FastSeq for Windows Version 4.0  
; SEQ ID NO 5  
; LENGTH: 670  
; TYPE: DNA  
; ORGANISM: Homo sapiens  
US-10-294-228-5

Query Match 22.8%; Score 108.8; DB 16; Length 670;  
Best Local Similarity 59.8%; Pred. No. 3.9e-27;  
Matches 201; Conservative 0; Mismatches 132; Indels 3; Gaps 1;  
QY 103 GAAGTGGTGCCTTTCAATGAAGTGTGGGGCCGCGAGCTACTGCGGCGCAATGGAGAAGCTG 162  
Db 79 GAAGTGGTGAAGTTTCAATGGATGTCTATCAGCGCAGCTACTGCCATCCAATCGAGACCCCTG 138  
QY 163 GTGTACATTCAGATGAACACCCCTAATGAAGTGTCTCATATATTTCAGTCCGTTCATGTGTC 222  
Db 139 GTGGACATCTTCCAGGAGTACCCCTGTATGAGATCGAGTACATCTTCAAGCCATCCTGTGTG 198  
QY 223 CTTCGTAGTCGCTGTAGTGGTGTGTGGTGACGAGGGTGTGCACTGTGTGGCGCTAAAG 282  
Db 199 CCCCTGATGCGATGCGGGGGCTGTGCTGCAATGACGAGGGCCTGGAGTGTGTGCCCACTGAG 258  
QY 283 ACAGCCAAACATCACTACTATGCAATCTTAAAGATTCCCCCAATCGGGATCCACATTCCTTAC 342



Db	259	GAGTCCAAACATCAACATGCAGATTATGCGGATCAAAACCTCACCAAGGCCAGCA---CATA	315
QY	343	GTGGAGATGACATTCTCTCAGGATGTACTCTGCGAATGCAGGCCCTATTCTGGAGACGACA	402
Db	316	GGAGAGATGAGCTTCCTACAGCACAAACAAATGTGAATGCAGACCACCAAGAGGATAGAGCA	375
QY	403	AAGGCAGAAAGGAGGAAAAACCAAGGGGAAGAGGAAG	438
Db	376	AGACAAGAAAAAAATCAGTTCGAGGAAAGGGAAG	411

Search completed: September 16, 2004, 22:22:40  
 Job time : 350 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model  
Run on: September 13, 2004, 09:33:13 ; Search time 129 Seconds  
(without alignments)  
346.066 Million cell updates/sec

Title: US-10-071-370A-4  
Perfect score: 846  
Sequence: 1 MLAMKLFCTFLQVLGLAVH.....RKTGKRKQSKTPQTEPHL 158

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : A\_Geneseq\_29Jan04:\*  
1: Geneseqp1980s:\*  
2: Geneseqp1990s:\*  
3: Geneseqp2000s:\*  
4: Geneseqp2001s:\*  
5: Geneseqp2002s:\*  
6: Geneseqp2003as:\*  
7: Geneseqp2003bs:\*  
8: Geneseqp2004s:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	846	100.0	158	2	AAR27353 Sequence
2	846	100.0	158	2	AAR27357 Sequence
3	846	100.0	158	2	AAR22349 Rat VEGF-
4	846	100.0	158	2	AAW53644 Vascular
5	846	100.0	158	2	AAW53646 Vascular
6	846	100.0	158	3	AAY57032 VEGFB 158
7	846	100.0	158	4	AAB37508 Rat VEGF
8	846	100.0	158	4	AAB73963 Rat VEGF
9	846	100.0	158	4	AAB73964 Rat VEGF
10	846	100.0	158	6	ABU62003 Amino aci
11	846	100.0	158	6	ABU62006 Amino aci
12	846	100.0	158	6	ADA25601 Rat VEGF
13	740	87.5	138	2	AAR27356 Sequence
14	740	87.5	138	2	AAR22350 Rat VEGF-
15	740	87.5	138	2	AAW53645 Vascular
16	740	87.5	138	3	AAY57031 VEGFB 138
17	740	87.5	138	4	AAB37507 Rat VEGF
18	740	87.5	138	4	AAB73966 Rat VEGF
19	740	87.5	138	6	ABU62004 Amino aci
20	740	87.5	138	6	ABU62007 Amino aci
21	740	87.5	138	6	ADA25599 Rat VEGF
22	729	86.2	140	2	AAW53647 Vascular
23	501.5	59.3	170	3	AAY57025 Vascular
24	501.5	59.3	170	4	AAB37510 Human VEG
25	501.5	59.3	170	6	ADA25607 Rat VEGF

26	498.5	58.9	154	2	AAR27349	Aar27349 Sequence
27	498.5	58.9	154	3	AAV57033	Aay57033 VEGFB 154
28	498.5	58.9	154	4	AAB37509	Aab37509 Rat VEGF
29	498.5	58.9	154	6	ADA25603	Ada25603 Rat VEGF
30	492.5	58.2	170	4	AAV97566	Aay97566 Human PIG
31	492	58.2	170	2	AAR23060	Aar23060 PlGF angi
32	474.5	56.1	149	3	AAB10646	Aab10646 Human PLG
33	474.5	56.1	149	3	AAV57034	Aay57034 VEGFC 149
34	474.5	56.1	149	4	AAB37511	Aab37511 Human VEG
35	474.5	56.1	149	4	AAV97565	Aay97565 Human PIG
36	474.5	56.1	149	4	AAU08439	Aau08439 Polyypepti
37	474.5	56.1	149	6	ABU03512	Abu03512 Angiogene
38	474.5	56.1	149	6	ADA25609	Ada25609 Rat cDNA
39	474.5	56.1	149	7	ADD08952	Add08952 Human PIG
40	474.5	56.1	155	5	ABB06756	Abb06756 Chimeric
41	465.5	55.0	149	2	AAR23059	Aar23059 PlGF angi
42	456.5	54.0	170	2	AAW86204	Aaw86204 Human pla
43	448.5	53.0	152	2	AAV08289	Aay08289 Human gro
44	416.5	49.2	131	2	AAV08288	Aay08288 Human gro
45	365.5	43.2	163	5	ABB06757	Abb06757 Chimeric

ALIGNMENTS

RESULT 1  
AAR27353  
ID AAR27353 standard; protein; 158 AA.  
XX

AC AAR27353;

XX  
DT 25-MAR-2003 (revised)  
DT 25-FEB-1993 (first entry)  
XX

DE Sequence of vascular endothelial cell growth factor VEGF AB subunit B.

XX

KW Vascular development; mitogen; blood vessel;

OS Homo sapiens.

XX

PH Key Location/Qualifiers

FT Modified-site 97

XX

PN EP506477-A1.

XX

PD 30-SEP-1992.

XX

PF 27-MAR-1992; 92EP-00302750.

XX

PR 28-MAR-1991; 91US-00676436.

XX

PA (MERI ) MERCK & CO INC.

XX

PI Bayne ML, Thomas KA;

XX

DR WPI; 1992-325745/40.

DR N-PSDB; AAQ28952.

XX

PT Vascular endothelial cell growth factor sub-units - which stimulate vascular endothelial cell growth, used for inducing tissue repair and growth.

XX Example; Fig 3; 61pp; English.

PS GS-9L cells were cultured and the VEGF AB subunits were isolated and sequenced. The reduced and carboxymethylated protein eluted as two peaks at approx. 23 and 25 ml that were of approx. equal area as determined by monitoring absorbance at 210 nm. Samples of the two protein subunits isolated after reduction and carboxymethylation were each applied to polybrene-coated glass fiber filters and their N-terminal sequences were determined. The peak of absorbance eluting at approx 25 ml (A subunit)

CC yielded an amino terminal sequence Ala Pro Thr Glu Gly Glu Lys Ala  
CC His Glu Val identical to VEGF AA. The peak of absorbance eluting at  
CC approx. 23 ml (B subunit) yielded the N-terminal sequence Ala Leu Ser Ala  
CC Gly Asn Xaa Ser Thr Glu Met Glu Val Pro Phe Asn Glu Val plus a nearly  
CC equal amount of a truncated form of the same sequence missing the first  
CC three residues. The missing X residue corresp. to an Asn in the cloned  
CC sequence. The A and sum of the B chain peptides were recovered in nearly  
CC equal amounts supporting the interpretation that the two peptides  
CC combine to form an AB heterodimer in VEGF II. The form of VEGF AB mature  
CC A subunit in the heterodimer is the 164 amino acid form. The form of VEGF  
CC AB mature B subunit in the heterodimer is the 135 amino acid form derived  
CC from the 158 full length amino acid form. (Updated on 25-MAR-2003 to  
CC correct PN field.) (Updated on 25-MAR-2003 to correct PD field.)

XX Sequence 158 AA;

SQ Query Match 100.0%; Score 846; DB 2; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
DB 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
DB 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
QY 121 QDVLCERPILETTKAERRKTGKRKQSKTPQTEEPHL 158  
DB 121 QDVLCERPILETTKAERRKTGKRKQSKTPQTEEPHL 158

RESULT 2  
AAR27357  
ID AAR27357 standard; protein; 158 AA.  
XX AAR27357;

XX 25-MAR-2003 (revised)  
DT 25-FEB-1993 (first entry)  
XX Sequence of vascular endothelial cell growth factor VEGF B 158 amino acid  
DE residue subunit.  
XX Vascular development; mitogen; blood vessel;  
KW vascular endothelial growth factor; neovascularisation.

XX Rattus.  
XX EP506477-A1.  
XX 30-SEP-1992.  
XX 27-MAR-1992; 92EP-00302750.  
XX 28-MAR-1991; 91US-00676436.  
XX (MERI ) MERCK & CO INC.  
XX Bayne ML, Thomas KA;  
XX WPI; 1992-325745/40.  
DR N-PSDB; AAQ28956.

XX Vascular endothelial cell growth factor sub-units - which stimulate  
PT vascular endothelial cell growth, used for inducing tissue repair and  
PT growth.  
XX Disclosure; Fig 8; 6lpp; English.

XX The full length coding region of the B subunit or monomer of VEGF is  
CC determined from four sets of overlapping cDNA clones. Degenerate oligo.

CC primers based on the amino acid sequences from polypeptide L50 are used  
CC to PCR amplify the central region of the cDNA for VEGF AB,B monomer. A  
CC single band migrating at 108 bp was gel purified, digested with SalI,  
CC ligated into pGEM3Zf(+) and sequenced. The nucleotide sequence obtained  
CC (pYG) was used to design antisense and sense PCR primers to amplify the  
CC 5' and 3' ends of the cDNA. These 5' and 3' clones are denoted p5V2 and  
CC p3V2 respectively. The entire base sequence for the 158 amino acid  
CC microheterogeneous B subunit and the 138 amino acid microheterogeneous B  
CC subunit are shown in AAQ28955 and AAQ28956. (Updated on 25-MAR-2003 to  
CC correct PN field.) (Updated on 25-MAR-2003 to correct PD field.)

XX Sequence 158 AA;

SQ Query Match 100.0%; Score 846; DB 2; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
DB 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
DB 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
QY 121 QDVLCERPILETTKAERRKTGKRKQSKTPQTEEPHL 158  
DB 121 QDVLCERPILETTKAERRKTGKRKQSKTPQTEEPHL 158

RESULT 3  
AAR22349  
ID AAR22349 standard; protein; 158 AA.  
XX AAR22349;

XX 29-JUL-1992 (first entry)  
XX Rat VEGF-II 135 amino acid mature B-subunit.  
DE VEGF-II; mammalian glioma cell; conditioned medium; heterodimer;  
KW homodimer; mitogenesis; vascular repair; blood vessel implant.  
XX Rattus.

XX Location/Qualifiers  
FH Key 1. .23  
FT Peptide /label= signal  
FT Protein 24. .158  
FT Peptide /label= mature\_VEGF\_B\_monomer  
FT /label= [L44]  
FT /note= "Leu C cleavage peptide"  
FT Modified-site 30. .32  
FT /label= N-glycosylation  
FT Peptide 54. .94  
FT /label= L50  
FT /note= "Leu C cleavage peptide"  
FT Peptide 95. .104  
FT /label= L35  
FT /note= "Leu C cleavage peptide"  
FT Modified-site 97. .99  
FT /label= N-glycosylation  
FT Peptide 105. .135  
FT /label= [L44]  
FT /note= "Leu C cleavage peptide"  
FT Peptide 150. .158  
FT /label= L26  
FT /note= "Leu C cleavage peptide"

XX EP476983-A.

XX 25-MAR-1992.



XX 18-SEP-1991; 91EP-00308489.  
PF  
XX  
XX 21-SEP-1990; 90US-00586638.  
PR  
XX 21-SEP-1990; 90US-00586640.  
PR  
XX  
XX (MERI ) MERCK & CO INC.  
PA  
XX  
XX Bayne ML, Conn GL, Thomas KA;  
PI  
XX  
XX WPI; 1992-098641/13.  
DR  
XX N-PSDB; AAQ23040.  
DR  
XX  
XX Vascular endothelial cell growth factor II - used as coating for  
PT artificial blood vessels or to promote tissue repair.  
PT  
XX  
XX Claim 8; Fig 6; 38pp; English.  
PS  
XX  
CC The full-length coding region of the B monomer was determined from four  
CC sets of overlapping cDNA clones. PCR primers were designed based on the  
CC amino acid sequence of a Leu C peptide (L50) and used to amplify the  
CC central region of the cDNA. A single band migrating at 108bp was gel  
CC purified, digested with SalI, ligated into pGEM3zf(+) and sequenced. The  
CC nucleotide sequence obtained was used to design antisense and sense PCR  
CC primers to amplify the 5' and 3' ends of the cDNA and complete the full-  
CC length sequence. The VEGF-II can exist as a homodimer or as a heterodimer  
CC with an A-subunit (see AAR22347). VEGF-II can be used to stimulate  
CC endothelial cells for induction of blood vessel growth, for vascular  
CC repair and for production of artificial blood vessels. See also AAQ23038  
CC and AAQ23041-Q23059  
XX  
SQ Sequence 158 AA;  
Query Match 100.0%; Score 846; DB 2; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MLAMKLTCTCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTCTCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120  
QY 121 QDVLCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
RESULT 4  
AAW53644  
ID AAW53644 standard; protein; 158 AA.  
XX  
AC AAW53644;  
XX  
DT 30-JUL-1998 (first entry)  
XX  
DE Vascular endothelial growth factor I A subunit 3.  
XX  
KW Vascular endothelial cell growth factor; VEGF II; rat; glioma cell;  
KW mitogenesis; blood vessel growth; artificial blood vessel.  
XX  
OS Rattus sp.  
XX  
PN US5726152-A.  
XX  
PD 10-MAR-1998.  
XX  
PF 31-AUG-1994; 94US-00299185.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.

XX (MERI ) MERCK & CO INC.  
PA  
XX Conn GL, Thomas KA, Bayne ML;  
PI  
XX WPI; 1998-206007/18.  
DR  
XX N-PSDB; AAV25536.  
DR  
XX Vascular endothelial growth factor proteins - having specified A and B  
PT sub-units.  
PT  
XX Example 9; Fig 4; 46pp; English.  
PS  
XX  
CC The present sequence represents a rat vascular endothelial growth factor  
CC I (VEGF I) A subunit. The present invention describes: (1) a mammalian  
CC VEGF II protein comprising an A subunit from AAW53639, AAW53640 or  
CC AAW53641, and a B subunit from AAW53638, AAW53639 or the first 115-135  
CC amino acids of AAW53638; and (2) a mammalian VEGF comprising a  
CC heterodimer or homodimer of B subunits. The growth factor is used for  
CC promoting vascular development and repair and for promoting tissue repair  
XX  
SQ Sequence 158 AA;  
Query Match 100.0%; Score 846; DB 2; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MLAMKLTCTCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTCTCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120  
QY 121 QDVLCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
RESULT 5  
AAW53646  
ID AAW53646 standard; protein; 158 AA.  
XX  
AC AAW53646;  
XX  
DT 30-JUL-1998 (first entry)  
XX  
DE Vascular endothelial growth factor II B subunit 1.  
XX  
KW Vascular endothelial cell growth factor; VEGF II; rat; glioma cell;  
KW mitogenesis; blood vessel growth; artificial blood vessel.  
XX  
OS Rattus sp.  
XX  
PN US5726152-A.  
XX  
PD 10-MAR-1998.  
XX  
PF 31-AUG-1994; 94US-00299185.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Conn GL, Thomas KA, Bayne ML;  
XX  
DR WPI; 1998-206007/18.  
DR N-PSDB; AAV25538.  
XX  
PT Vascular endothelial growth factor proteins - having specified A and B  
PT sub-units.

XX Claim 1; Fig 6; 46pp; English.

XX The present sequence represents a rat vascular endothelial growth factor

CC II (VEGF II) B subunit. The present invention describes: (1) a mammalian

CC VEGF II protein comprising an A subunit from AAW53639, AAW53640 or

CC AAW53641, and a B subunit from AAW53638, AAW53639 or the first 115-135

CC amino acids of AAW53638; and (2) a mammalian VEGF comprising a

CC heterodimer or homodimer of B subunits. The growth factor is used for

CC promoting vascular development and repair and for promoting tissue repair

XX Sequence 158 AA;

Query Match 100.0%; Score 846; DB 2; Length 158;

Best Local Similarity 100.0%; Pred. No. 4e-86;

Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLFCTCFLQVLAVHSQGALSAGNNSSTEMEVVPPFNEVWGRSYCRPMEKLVYIADE 60

Db 1 MLAMKLFCTCFLQVLAVHSQGALSAGNNSSTEMEVVPPFNEVWGRSYCRPMEKLVYIADE 60

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120

Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120

QY 121 QDVLCECRPILETTKAERRKTGKRKQSKTPQTEEPHL 158

Db 121 QDVLCECRPILETTKAERRKTGKRKQSKTPQTEEPHL 158

RESULT 6

AAAY57032

ID AAY57032 standard; protein; 158 AA.

AC AAY57032;

XX 15-FEB-2000 (first entry)

DT VEGFB 158 amino acid residue subunit sequence.

DE VEGF; vascular endothelial growth factor; B subunit; tissue growth;

XX vascular development; artificial blood vessel; repair; human.

OS Homo sapiens.

XX US5994300-A.

PN 30-NOV-1999.

XX 20-SEP-1993; 93US-00124259.

PF 28-MAR-1991; 91US-00676436.

XX (MERI ) MERCK & CO INC.

PA Thomas KA, Bayne ML;

PI WPI; 2000-038268/03.

XX N-PSDB; AAZ39830.

PT Purified and isolated vascular endothelial cell growth factor C subunit

PT for the induction of tissue repair or growth.

XX Disclosure; Fig 8; 58pp; English.

XX This is the amino acid sequence of a 158 amino acid residue B subunit of

CC vascular endothelial cell growth factor (VEGF). The invention relates to

CC a purified and isolated VEGF C subunit amino acid sequence AAY57025. VEGF

CC exists in various microheterogeneous forms, and is useful for the

CC promotion of vascular development and repair. The invention also relates

CC to human VEGF heterodimers AC or BC and homodimer CC, where A, B and C

CC are subunit amino acid sequences. The VEGF AC, BC or CC amino acid

CC sequences can be used in a tissue repairing pharmaceutical composition.

CC The novel growth factors are useful for the production or coverage of

CC artificial blood vessels with vascular endothelial cell. They are also

CC useful for the induction of tissue growth and repair

XX Sequence 158 AA;

Query Match 100.0%; Score 846; DB 3; Length 158;

Best Local Similarity 100.0%; Pred. No. 4e-86;

Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLFCTCFLQVLAVHSQGALSAGNNSSTEMEVVPPFNEVWGRSYCRPMEKLVYIADE 60

Db 1 MLAMKLFCTCFLQVLAVHSQGALSAGNNSSTEMEVVPPFNEVWGRSYCRPMEKLVYIADE 60

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120

Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFS 120

QY 121 QDVLCECRPILETTKAERRKTGKRKQSKTPQTEEPHL 158

Db 121 QDVLCECRPILETTKAERRKTGKRKQSKTPQTEEPHL 158

RESULT 7

AAB37508

ID AAB37508 standard; protein; 158 AA.

XX AAB37508;

XX 26-FEB-2001 (first entry)

DT Rat VEGF subunit B SEQ ID NO: 39.

DE Vascular endothelial growth factor; VEGF C subunit; cell division;

XX artificial blood vessel; tissue growth; tissue repair.

OS Rattus sp.

XX US6140073-A.

PN 31-OCT-2000.

XX 16-JAN-1996; 96US-00586039.

PF 28-MAR-1991; 91US-00676436.

PR 20-SEP-1993; 93US-00124259.

XX (MERI ) MERCK & CO INC.

PA Thomas KA, Bayne ML;

PI WPI; 2001-014858/02.

XX N-PSDB; AAC83515.

PT Human vascular endothelial cell growth factor (VEGF) C subunit DNA and

PT protein, useful for promoting vascular development and repair, and for

XX promoting tissue repair, especially for treating wounds in mammals.

PS Example 10; Fig 8; 58pp; English.

XX The present invention is concerned with the human vascular endothelial

CC growth factor (VEGF) C subunit. VEGF is a vascular endothelial cell

CC mitogen and can be used to promote vascular development and repair. The C

CC subunit may exist as a homodimer or a heterodimer with the VEGF A or B

CC subunit. VEGF can be used in the treatment of wounds of mammals, to cover

CC artificial blood vessels with vascular endothelial cells, in the

CC production of artificial blood vessels and to induce tissue repair or

XX growth

XX Sequence 158 AA;

Query Match 100.0%; Score 846; DB 4; Length 158;

Best Local Similarity 100.0%; Pred. No. 4e-86;

Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MLAMKLTFCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTFCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60

Qy 61 HPNEVSHIFSPSCVLLSRCSCGCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTFS 120

Qy 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158

RESULT 8  
AAB73963  
ID AAB73963 standard; protein; 158 AA.  
XX  
AC AAB73963;  
XX  
DT 23-NOV-2001 (first entry)  
XX  
DE Rat VEGF I B subunit.  
XX  
KW Rat; vascular endothelial growth factor II; VEGF-II; wound healing;  
KW vascular repair; neovascularisation; tissue repair; VEGF I B subunit;  
KW vulnerary; angiogenesis.  
XX  
OS Rattus sp.  
XX  
PN US6180107-B1.  
XX  
PD 30-JAN-2001.  
XX  
PF 10-MAR-1998; 98US-00038199.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
PR 31-AUG-1994; 94US-00299185.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Conn GL, Thomas KA;  
XX  
DR WPI; 2001-256064/26.  
DR N-PSDB; AAF81272.  
XX  
PT Stimulating angiogenesis or wound healing through vascular repair,  
PT neovascularization or both, comprises administering mammalian vascular  
PT endothelial growth factor II comprising two different subunits.  
XX  
PS Disclosure; Fig 4I-4K; 46pp; English.  
XX  
CC The invention relates to a method for stimulating angiogenesis or wound  
CC healing through vascular repair, neovascularisation or both. The method  
CC comprises administering to a patient a pharmaceutically effective amount  
CC of mammalian vascular endothelial growth factor II (VEGF-II) comprising a  
CC heterodimer of subunits A and B, or a homodimer of B subunits. VEGF-II is  
CC useful for vascular development and repair, promotion of tissue repair,  
CC and the production of artificial vessels. The present sequence is VEGF I  
CC B subunit  
XX  
SQ Sequence 158 AA;

Query Match 100.0%; Score 846; DB 4; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MLAMKLTFCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTFCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60

Qy 61 HPNEVSHIFSPSCVLLSRCSCGCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTFS 120

Qy 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158

RESULT 9  
AAB73964  
ID AAB73964 standard; protein; 158 AA.  
XX  
AC AAB73964;  
XX  
DT 23-NOV-2001 (first entry)  
XX  
DE Rat VEGF II B subunit mature 135 amino acid form.  
XX  
KW Rat; vascular endothelial growth factor II; VEGF-II; wound healing;  
KW vascular repair; neovascularisation; tissue repair; VEGF II B subunit;  
KW vulnerary; angiogenesis.  
XX  
OS Rattus sp.  
XX  
FH Key Location/Qualifiers  
FT Peptide 1..23  
FT Protein /label= Signal\_peptide  
FT 24..158  
FT /label= VEGF\_II\_B\_subunit  
XX  
PN US6180107-B1.  
XX  
PD 30-JAN-2001.  
XX  
PF 10-MAR-1998; 98US-00038199.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
PR 31-AUG-1994; 94US-00299185.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Conn GL, Thomas KA;  
XX  
DR WPI; 2001-256064/26.  
DR N-PSDB; AAF81273.  
XX  
PT Stimulating angiogenesis or wound healing through vascular repair,  
PT neovascularization or both, comprises administering mammalian vascular  
PT endothelial growth factor II comprising two different subunits.  
XX  
PS Claim 1; Fig 6; 46pp; English.  
XX  
CC The invention relates to a method for stimulating angiogenesis or wound  
CC healing through vascular repair, neovascularisation or both. The method  
CC comprises administering to a patient a pharmaceutically effective amount  
CC of mammalian vascular endothelial growth factor II (VEGF-II) comprising a  
CC heterodimer of subunits A and B, or a homodimer of B subunits. VEGF-II is  
CC useful for vascular development and repair, promotion of tissue repair,  
CC and the production of artificial vessels. The present sequence is the  
CC mature 135 amino acid form of VEGF II B subunit  
XX  
SQ Sequence 158 AA;

Query Match 100.0%; Score 846; DB 4; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MLAMKLTFCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTFCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
QY 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158

RESULT 10  
ABU62003  
ID ABU62003 standard; protein; 158 AA.  
XX  
AC ABU62003;  
XX  
DT 19-AUG-2003 (first entry)  
XX  
DE Amino acid sequence for rat VEGF I A subunit cleavage product #2.  
XX  
KW Rat; vascular endothelial growth factor II; VEGF II; mitogenesis;  
KW mammalian; vascular endothelial cell growth; tissue repair;  
KW vascular development; vascular repair; blood vessel growth;  
KW neovascularisation; artificial blood vessel; polymeric vessel; vulnerary;  
KW A subunit.  
XX  
OS Rattus sp.  
XX  
FH Key Location/Qualifiers  
FT Peptide 1. .23  
FT /label= Signal\_peptide  
FT Protein 24. .158  
FT /label= Mature\_secreted\_VEGF\_I\_A\_subunit  
XX  
PN US2003045471-A1.  
XX  
PD 06-MAR-2003.  
XX  
PF 08-FEB-2002; 2002US-00071370.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
PR 31-AUG-1994; 94US-00299185.  
PR 10-MAR-1998; 98US-00038199.  
PR 07-JUN-1999; 99US-00326879.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Conn GL, Thomas KA;  
XX  
DR WPI; 2003-371473/35.  
DR N-PSDB; ACA62371.  
XX  
PT New heterodimeric vascular endothelial growth factor II comprising A and  
PT B subunits encoded by different genes, useful for preparing a composition  
PT for promoting vascular or tissue repair or neovascularization.  
XX  
PS Example 9; Fig 4I-4K; 50pp; English.  
XX  
CC The present invention relates to the isolation of vascular endothelial  
CC growth factor II (VEGF II), and the polynucleotide sequences encoding it.  
CC VEGF II is a heterodimer comprising A and B subunits that are encoded by  
CC different genes. VEGF II stimulates mitogenesis of mammalian vascular  
CC endothelial cells. VEGF II is useful for promoting tissue repair and for  
CC stimulating the growth of vascular endothelial cells. VEGF II can also be  
CC used for stimulating the growth of vascular endothelial cells in a  
CC patient to promote vascular development and repair, or blood vessel  
CC growth (neovascularisation). VEGF II can further be used to produce  
CC artificial blood vessels by treating synthetic polymeric vessels with  
CC VEGF II, and implanting into them into a patient. After the implantation  
CC endothelial cells migrate into and grow on the artificial surface. The  
CC present sequence represents rat VEGF I A subunit cleavage product #2  
XX  
SQ Sequence 158 AA;

Query Match 100.0%; Score 846; DB 6; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLFTCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLFTCFLQVLAVHSQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADE 60

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120

QY 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158

RESULT 11  
ABU62006  
ID ABU62006 standard; protein; 158 AA.  
XX  
AC ABU62006;  
XX  
DT 19-AUG-2003 (first entry)  
XX  
DE Amino acid sequence for rat VEGF II B subunit.  
XX  
KW Rat; vascular endothelial growth factor II; VEGF II; mitogenesis;  
KW mammalian; vascular endothelial cell growth; tissue repair;  
KW vascular development; vascular repair; blood vessel growth;  
KW neovascularisation; artificial blood vessel; polymeric vessel; vulnerary;  
KW B subunit.  
XX  
OS Rattus sp.  
XX  
FH Key Location/Qualifiers  
FT Peptide 1. .23  
FT /label= Signal\_peptide  
FT Protein 24. .158  
FT /label= Mature\_secreted\_VEGF\_II\_B\_subunit  
XX  
PN US2003045471-A1.  
XX  
PD 06-MAR-2003.  
XX  
PF 08-FEB-2002; 2002US-00071370.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
PR 31-AUG-1994; 94US-00299185.  
PR 10-MAR-1998; 98US-00038199.  
PR 07-JUN-1999; 99US-00326879.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Conn GL, Thomas KA;  
XX  
DR WPI; 2003-371473/35.  
DR N-PSDB; ACA62374.  
XX  
PT New heterodimeric vascular endothelial growth factor II comprising A and  
PT B subunits encoded by different genes, useful for preparing a composition  
PT for promoting vascular or tissue repair or neovascularization.  
XX  
PS Claim 6; Fig 6; 50pp; English.  
XX  
CC The present invention relates to the isolation of vascular endothelial  
CC growth factor II (VEGF II), and the polynucleotide sequences encoding it.  
CC VEGF II is a heterodimer comprising A and B subunits that are encoded by  
CC different genes. VEGF II stimulates mitogenesis of mammalian vascular  
CC endothelial cells. VEGF II is useful for promoting tissue repair and for  
CC stimulating the growth of vascular endothelial cells. VEGF II can also be



CC used for stimulating the growth of vascular endothelial cells in a  
CC patient to promote vascular development and repair, or blood vessel  
CC growth (neovascularisation). VEGF II can further be used to produce  
CC artificial blood vessels by treating synthetic polymeric vessels with  
CC VEGF II and implanting into them into a patient. After the implantation  
CC endothelial cells migrate into and grow on the artificial surface. The  
CC present sequence represents rat VEGF II B subunit  
XX Sequence 158 AA;  
SQ

Query Match 100.0%; Score 846; DB 6; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLTCTCFLQVLAVHVSQGLSAGNNSSTEMEVVVFNEVWGRSYCRPMEKLVYIADE 60  
DB 1 MLAMKLTCTCFLQVLAVHVSQGLSAGNNSSTEMEVVVFNEVWGRSYCRPMEKLVYIADE 60

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
DB 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120

QY 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
DB 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158

RESULT 12  
ADA25601  
ID ADA25601 standard; protein; 158 AA.  
XX  
AC ADA25601;  
XX  
DT 20-NOV-2003 (first entry)  
XX  
DE Rat VEGF B 158 amino acid subunit.  
XX  
KW Vulnerary; vascular endothelial cell growth;  
KW vascular endothelial cell growth factor; VEGF; VEGF-A; VEGF-B; VEGF-C;  
KW mitogen; vascular development; vascular repair; tissue development;  
KW tissue repair; rat.  
XX  
OS Rattus sp.  
XX  
PN US6569434-B1.  
XX  
PD 27-MAY-2003.  
XX  
PF 30-OCT-2000; 2000US-00699769.  
XX  
PR 28-MAR-1991; 91US-00676436.  
PR 20-SEP-1993; 93US-00124259.  
PR 16-JAN-1996; 96US-00586039.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Thomas KA;  
XX  
DR WPI; 2003-605461/57.  
DR N-PSDB; ADA25600.  
XX

Stimulating vascular endothelial cell growth comprises administering an  
PT amount of a vascular endothelial cell growth factor comprising a first  
PT and a second C subunit amino acid sequence.  
XX  
PS Example 10; Fig 8; 58pp; English.  
XX

The invention relates to stimulating vascular endothelial cell growth  
CC comprises administering to a patient an effective vascular endothelial  
CC stimulatory amount of a vascular endothelial cell growth factor (VEGF)  
CC comprising a first and a second C subunit amino acid sequence, where the  
CC first and second subunits comprise a sequence appearing as ADA25607. Also  
CC disclosed as new are rat VEGF-A, -B and C subunit cDNAs and proteins. The

CC method and VEGF (a mitogen) are useful in inducing vascular or tissue  
CC development and repair. The present sequence represents a rat VEGF  
CC subunit.  
XX  
SQ Sequence 158 AA;  
Query Match 100.0%; Score 846; DB 6; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4e-86;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MLAMKLTCTCFLQVLAVHVSQGLSAGNNSSTEMEVVVFNEVWGRSYCRPMEKLVYIADE 60  
DB 1 MLAMKLTCTCFLQVLAVHVSQGLSAGNNSSTEMEVVVFNEVWGRSYCRPMEKLVYIADE 60

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
DB 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120

QY 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
DB 121 QDVLCCECRPILETTKAERRKTKGKRKQSKTPQTEEPHL 158

RESULT 13  
AAR27356  
ID AAR27356 standard; protein; 138 AA.  
XX  
AC AAR27356;  
XX  
DT 25-MAR-2003 (revised)  
DT 25-FEB-1993 (first entry)  
XX  
DE Sequence of vascular endothelial cell growth factor VEGF B 138 amino acid  
DE residue subunit.  
XX  
KW Vascular development; mitogen; blood vessel;  
KW vascular endothelial growth factor; neovascularisation.  
XX  
OS Rattus.  
XX  
PN EP506477-A1.  
XX  
PD 30-SEP-1992.  
XX  
PF 27-MAR-1992; 92EP-00302750.  
XX  
PR 28-MAR-1991; 91US-00676436.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Thomas KA;  
XX  
DR WPI; 1992-325745/40.  
DR N-PSDB; AAQ28955.  
XX  
PT Vascular endothelial cell growth factor sub-units - which stimulate  
PT vascular endothelial cell growth, used for inducing tissue repair and  
PT growth.  
XX  
PS Disclosure; Fig 7; 61pp; English.  
XX

The full length coding region of the B subunit or monomer of VEGF is  
CC determined from four sets of overlapping cDNA clones. Degenerate oligo.  
CC primers based on the amino acid sequences from polypeptide L50 are used  
CC to PCR amplify the central region of the cDNA for VEGF AB,B monomer. A  
CC single band migrating at 108 bp was gel purified, digested with SalI,  
CC ligated into pGEM3zf(+) and sequenced. The nucleotide sequence obtained  
CC (pYG) was used to design antisense and sense PCR primers to amplify the  
CC 5' and 3' ends of the cDNA. These 5' and 3' clones are denoted p5V2 and  
CC p3V2 respectively. The entire base sequence for the 158 amino acid  
CC microheterogeneous B subunit and the 138 amino acid microheterogeneous B  
CC subunit are shown in AAQ28955 and AAQ28956. (Updated on 25-MAR-2003 to  
CC correct PN field.) (Updated on 25-MAR-2003 to correct PD field.)

XX Sequence 138 AA;  
SQ  
Query Match 87.5%; Score 740; DB 2; Length 138;  
Best Local Similarity 100.0%; Pred. No. 2.3e-74;  
Matches 138; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
QY 121 QDVLCECRPILETTKAER 138  
Db 121 QDVLCECRPILETTKAER 138  
RESULT 14  
AAR22350  
ID AAR22350 standard; protein; 138 AA.  
XX  
AC AAR22350;  
XX  
DT 29-JUL-1992 (first entry)  
XX  
DE Rat VEGF-II 115 amino acid mature B-subunit.  
XX  
KW VEGF-II; mammalian glioma cell; conditioned medium; heterodimer;  
KW homodimer; mitogenesis; vascular repair; blood vessel implant.  
XX  
OS Rattus.  
XX  
FH Key Location/Qualifiers  
FT Peptide 1..23  
FT /label= signal  
FT Protein 24..138  
FT /label= mature\_VEGF\_B\_monomer  
FT Modified-site 30..32  
FT /label= N-glycosylation  
FT Modified-site 97..99  
FT /label= N-glycosylation  
XX  
PN EP476983-A.  
XX  
PD 25-MAR-1992.  
XX  
PF 18-SEP-1991; 91EP-00308489.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 21-SEP-1990; 90US-00586640.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Bayne ML, Conn GL, Thomas KA;  
XX  
DR WPI; 1992-098641/13.  
DR N-PSDB; AAR23040.  
XX  
PT Vascular endothelial cell growth factor II - used as coating for  
PT artificial blood vessels or to promote tissue repair.  
XX  
PS Claim 8; Fig 6; 38pp; English.  
XX  
CC The VEGF-II B-subunit exists in two forms; the mature protein has either  
CC 135 or 115 amino acids. The two forms are generated by alternative  
CC splicing of the mRNA transcript prior to translation. The proteins can be  
CC isolated from glioma cell-conditioned medium. For example, the rat cell  
CC line GS-9L was grown to confluence in MEM. VEGF-II was purified from the  
CC conditioned medium by carboxymethyl-Sephadex chromatography, polyaspartic  
CC acid WCX HPLC cation exchange chromatography, metal chelate

CC chromatography and reverse phase chromatography. See also AAR23038,  
CC AAR23040 and AAR23042-Q23059  
XX  
SQ Sequence 138 AA;  
Query Match 87.5%; Score 740; DB 2; Length 138;  
Best Local Similarity 100.0%; Pred. No. 2.3e-74;  
Matches 138; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
QY 121 QDVLCECRPILETTKAER 138  
Db 121 QDVLCECRPILETTKAER 138  
RESULT 15  
AAW53645  
ID AAW53645 standard; protein; 138 AA.  
XX  
AC AAW53645;  
XX  
DT 30-JUL-1998 (first entry)  
XX  
DE Vascular endothelial growth factor I A subunit 4.  
XX  
KW Vascular endothelial cell growth factor; VEGF II; rat; glioma cell;  
KW mitogenesis; blood vessel growth; artificial blood vessel.  
XX  
OS Rattus sp.  
XX  
PN US5726152-A.  
XX  
PD 10-MAR-1998.  
XX  
PF 31-AUG-1994; 94US-00299185.  
XX  
PR 21-SEP-1990; 90US-00586638.  
PR 05-JAN-1993; 93US-00000834.  
XX  
PA (MERI ) MERCK & CO INC.  
XX  
PI Conn GL, Thomas KA, Bayne ML;  
XX  
DR WPI; 1998-206007/18.  
DR N-PSDB; AAV25537.  
XX  
PT Vascular endothelial growth factor proteins - having specified A and B  
PT sub-units.  
XX  
PS Example 9; Fig 4; 46pp; English.  
XX  
CC The present sequence represents a rat vascular endothelial growth factor  
CC I (VEGF I) A subunit. The present invention describes: (1) a mammalian  
CC VEGF II protein comprising an A subunit from AAW53639, AAW53640 or  
CC AAW53641, and a B subunit from AAW53638, AAW53639 or the first 115-135  
CC amino acids of AAW53638; and (2) a mammalian VEGF comprising a  
CC heterodimer or homodimer of B subunits. The growth factor is used for  
CC promoting vascular development and repair and for promoting tissue repair  
XX  
SQ Sequence 138 AA;  
Query Match 87.5%; Score 740; DB 2; Length 138;  
Best Local Similarity 100.0%; Pred. No. 2.3e-74;  
Matches 138; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFFNEVWGRSYCRPMEKLVYIADE 60

Db	1	MLAMKLF	TCFLQV	LAGLAV	HSQAL	SAGN	STEME	VVPF	NEVW	GRSY	CRP	MEK	LVI	IADE	60					
QY	61	HPNEV	SHIF	SPSC	VLLS	RCS	CGC	CGD	EGLH	CV	AL	KT	ANIT	MQIL	KIPP	NRDP	PHSY	VE	MTFS	120
Db	61	HPNEV	SHIF	SPSC	VLLS	RCS	CGC	CGD	EGLH	CV	AL	KT	ANIT	MQIL	KIPP	NRDP	PHSY	VE	MTFS	120
QY	121	QDVLC	ECR	PI	LE	TT	KA	ER												
Db	121	QDVLC	ECR	PI	LE	TT	KA	ER												

Search completed: September 13, 2004, 09:50:56  
Job time : 131 secs

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OM protein - protein search, using sw model

Run on: September 13, 2004, 09:48:49 ; Search time 32 Seconds  
(without alignments)  
254.903 Million cell updates/sec

Title: US-10-071-370A-4  
Perfect score: 846  
Sequence: 1 MLAMKLTCTFLQVLGLAVH.....RKTGKRKQSKTPQTEPHL 158

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

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2: /cgn2\_6/ptodata/2/iaa/5B\_COMB.pep.\*  
3: /cgn2\_6/ptodata/2/iaa/6A\_COMB.pep.\*  
4: /cgn2\_6/ptodata/2/iaa/6B\_COMB.pep.\*  
5: /cgn2\_6/ptodata/2/iaa/PCTUS\_COMB.pep.\*  
6: /cgn2\_6/ptodata/2/iaa/backfiles1.pep.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	846	100.0	158	3	US-08-586-039B-39
2	846	100.0	158	4	US-09-699-769-39
3	740	87.5	138	3	US-08-586-039B-37
4	740	87.5	138	4	US-09-699-769-37
5	501.5	59.3	170	2	US-08-039-297B-8
6	501.5	59.3	170	3	US-08-586-039B-45
7	501.5	59.3	170	4	US-09-699-769-45
8	499.5	59.0	170	4	US-09-431-888-5
9	498.5	58.9	154	3	US-08-586-039B-41
10	498.5	58.9	154	4	US-09-699-769-41
11	474.5	56.1	149	1	US-08-469-427A-14
12	474.5	56.1	149	2	US-08-039-297B-2
13	474.5	56.1	149	2	US-08-569-063C-21
14	474.5	56.1	149	3	US-08-795-430-55
15	474.5	56.1	149	3	US-08-586-039B-47
16	474.5	56.1	149	4	US-09-355-700-55
17	474.5	56.1	149	4	US-08-706-054A-5
18	474.5	56.1	149	4	US-09-699-769-47
19	474.5	56.1	149	4	US-09-313-299-5
20	474.5	56.1	149	4	US-08-671-573B-54
21	319.5	37.8	214	3	US-08-586-039B-35
22	319.5	37.8	214	4	US-09-699-769-35
23	316	37.4	214	6	5240848-11
24	315	37.2	188	4	US-09-244-583-28
25	315	37.2	213	4	US-09-574-708A-8
26	315	37.2	215	3	US-08-586-039B-49
27	315	37.2	215	4	US-09-699-769-49

28	315	37.2	215	4	US-09-392-931-8	Sequence 8, Appli
29	315	37.2	215	6	5240848-7	Patent No. 5240848
30	315	37.2	232	2	US-08-999-811-7	Sequence 7, Appli
31	315	37.2	232	2	US-08-824-996-9	Sequence 9, Appli
32	315	37.2	232	3	US-09-042-105-7	Sequence 7, Appli
33	315	37.2	232	4	US-09-574-708A-10	Sequence 10, Appli
34	315	37.2	232	4	US-08-465-968-5	Sequence 5, Appli
35	314.5	37.2	231	5	PCT-US96-09001-10	Sequence 10, Appli
36	313.5	37.1	138	4	US-09-037-983C-16	Sequence 16, Appli
37	313.5	37.1	215	3	US-08-807-992B-3	Sequence 3, Appli
38	313.5	37.1	232	3	US-08-807-992B-4	Sequence 4, Appli
39	312.5	36.9	137	4	US-09-037-983C-17	Sequence 17, Appli
40	312.5	36.9	145	3	US-08-784-551C-2	Sequence 2, Appli
41	312.5	36.9	145	4	US-09-392-932-2	Sequence 2, Appli
42	312.5	36.9	145	4	US-09-574-708A-4	Sequence 4, Appli
43	312.5	36.9	145	4	US-09-037-983C-2	Sequence 2, Appli
44	312.5	36.9	145	4	US-09-428-909A-2	Sequence 2, Appli
45	312.5	36.9	145	4	US-09-392-931-4	Sequence 4, Appli

ALIGNMENTS

RESULT 1  
US-08-586-039B-39  
; Sequence 39, Application US/08586039B  
; Patent No. 6140073  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
; TITLE OF INVENTION: SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/586,039B  
; FILING DATE: 16-JAN-1996  
; CLASSIFICATION:  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 08/124,259  
; FILING DATE: 20-SEP-1993  
; APPLICATION NUMBER: 07/676,436  
; FILING DATE: 28-MAR-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hand, J. Mark  
; REGISTRATION NUMBER: 36,545  
; REFERENCE/DOCKET NUMBER: 18361DA  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (908) 594-3905  
; TELEFAX: (908) 594-4720  
; INFORMATION FOR SEQ ID NO: 39:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 158 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
US-08-586-039B-39

Query Match 100.0%; Score 846; DB 3; Length 158;  
Best Local Similarity 100.0%; Pred. No. 6.5e-91;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;



US-09-699-769-37.  
; Sequence 37, Application US/09699769  
; Patent No. 6569434  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; C SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/699,769  
; FILING DATE: 30-Oct-2000  
; CLASSIFICATION: <Unknown>  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 08/586,039  
; FILING DATE: 16-JAN-1996  
; APPLICATION NUMBER: 08/124,259  
; FILING DATE: 20-SEP-1993  
; APPLICATION NUMBER: 07/676,436  
; FILING DATE: 28-MAR-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hand, J. Mark  
; REGISTRATION NUMBER: 36,545  
; REFERENCE/DOCKET NUMBER: 18361DB  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (732) 594-3905  
; TELEFAX: (732) 594-4720  
; INFORMATION FOR SEQ ID NO: 37:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 138 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; SEQUENCE DESCRIPTION: SEQ ID NO: 37:  
US-09-699-769-37  
Query Match 87.5%; Score 740; DB 4; Length 138;  
Best Local Similarity 100.0%; Pred. No. 1.3e-78;  
Matches 138; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MLAMKLTCTFLQVLAVHSGAGSAGNNSSTEMEVVFPFNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTCTFLQVLAVHSGAGSAGNNSSTEMEVVFPFNEVWGRSYCRPMEKLVYIADE 60  
QY 61 HPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNDRDPHSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNDRDPHSYVEMTFS 120  
QY 121 QDVLCCECPILETTTKAER 138  
Db 121 QDVLCCECPILETTTKAER 138  
RESULT 5  
US-08-039-297B-8  
; Sequence 8, Application US/08039297B  
; Patent No. 5919899  
; GENERAL INFORMATION:  
; APPLICANT: PERSICO, MARIA  
; MAGIONE, DOMENICO

; TITLE OF INVENTION: NUCLEOTIDE SEQUENCES CODING FOR A  
; TITLE OF INVENTION: HUMAN  
; TITLE OF INVENTION: PROTEIN WITH ANGIOGENESIS REGULATIVE PROPERTIES  
; NUMBER OF SEQUENCES: 8  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: BEVERIDGE, DeGRANDI, WEILACHER & YOUNG,  
; ADDRESSEE: L.L.P.  
; STREET: 1850 M Street, N.W.  
; CITY: Washington  
; STATE: DC  
; COUNTRY: USA  
; ZIP: 20036  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/039,297B  
; FILING DATE: 19-APR-1993  
; CLASSIFICATION: 435  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: IT 48315-A90\  
; FILING DATE: 27-SEP-1990  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Weilacher, Robert G  
; REGISTRATION NUMBER: 20,531  
; REFERENCE/DOCKET NUMBER: 48573  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 202-659-2811  
; TELEFAX: 202-659-1462  
; TELEX: WUI64470  
; INFORMATION FOR SEQ ID NO: 8:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 170  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: unknown  
US-08-039-297B-8  
Query Match 59.3%; Score 501.5; DB 2; Length 170;  
Best Local Similarity 61.5%; Pred. No. 1.2e-50;  
Matches 96; Conservative 23; Mismatches 32; Indels 5; Gaps 2;  
QY 1 MLAMKLTCTFLQVLAVHSGAGSAGNNSSTEMEVVFPFNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCTFLQVLAVHSGAGSAGNNSSTEMEVVFPFNEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNDRDPHSYVE 116  
Db 61 VVSEYEPSEVHEMFSPSCVLLSRCTCGGDEGLHCVPVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSQDVLCCECPILETTTKAERKTKGKRKQSKTPQ 152  
Db 120 LTFSQHVRCCECPILREKMKPERRRPKRGKRREKQ 155  
RESULT 6  
US-08-586-039B-45  
; Sequence 45, Application US/08586039B  
; Patent No. 6140073  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
; TITLE OF INVENTION: SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA





Matches 96; Conservative 23; Mismatches 32; Indels 5; Gaps 2;

QY 1 MLAMKLFCTCFLQVLAVHS-----QGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCFLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNRPDHSYVE 116  
Db 61 VVSEYPSEVEHMFSPSCVSLLRCTGCCGDEDLHCVPVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCCECRPILETTKAERRKTKGKRKQSKTPQ 152  
Db 120 LTFSSHVRCECRPLREKMKPERRRPKGRKRRNQ 155

RESULT 9

US-08-586-039B-41  
; Sequence 41, Application US/08586039B  
; Patent No. 6140073  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
; TITLE OF INVENTION: SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/586,039B  
; FILING DATE: 16-JAN-1996  
; CLASSIFICATION:  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 08/124,259  
; FILING DATE: 20-SEP-1993  
; APPLICATION NUMBER: 07/676,436  
; FILING DATE: 28-MAR-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hand, J. Mark  
; REGISTRATION NUMBER: 36,545  
; REFERENCE/DOCKET NUMBER: 18361DA  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (908) 594-3905  
; TELEFAX: (908) 594-4720  
; INFORMATION FOR SEQ ID NO: 41:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 154 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; US-08-586-039B-41

Query Match 58.9%; Score 498.5; DB 3; Length 154;  
Best Local Similarity 62.1%; Pred. No. 2.3e-50;  
Matches 95; Conservative 23; Mismatches 30; Indels 5; Gaps 2;

QY 1 MLAMKLFCTCFLQVLAVHS-----QGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCFLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNRPDHSYVE 116  
Db 61 VVSEYPSEVEHMFSPSCVSLLRCTGCCGDEDLHCVPVETANVTMQLLKIRSGDRP-SYVE 119

QY 117 MTFSDVLCCECRPILETTKAERRKTKGKRKQSK 149  
Db 120 LTFSSHVRCECRPLREKMKPERRRPKGRKRRR 152

RESULT 10

US-09-699-769-41  
; Sequence 41, Application US/09699769  
; Patent No. 6569434  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Thomas Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; C SUBUNIT  
; NUMBER OF SEQUENCES: 49  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Merck & Co., Inc.  
; STREET: 126 E. Lincoln Avenue  
; CITY: Rahway  
; STATE: New Jersey  
; COUNTRY: USA  
; ZIP: 07065-0900  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Microsoft Word 6  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/699,769  
; FILING DATE: 30-Oct-2000  
; CLASSIFICATION: <Unknown>  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: 08/586,039  
; FILING DATE: 16-JAN-1996  
; APPLICATION NUMBER: 08/124,259  
; FILING DATE: 20-SEP-1993  
; APPLICATION NUMBER: 07/676,436  
; FILING DATE: 28-MAR-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Hand, J. Mark  
; REGISTRATION NUMBER: 36,545  
; REFERENCE/DOCKET NUMBER: 18361DB  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (732) 594-3905  
; TELEFAX: (732) 594-4720  
; INFORMATION FOR SEQ ID NO: 41:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 154 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; SEQUENCE DESCRIPTION: SEQ ID NO: 41:  
; US-09-699-769-41

Query Match 58.9%; Score 498.5; DB 4; Length 154;  
Best Local Similarity 62.1%; Pred. No. 2.3e-50;  
Matches 95; Conservative 23; Mismatches 30; Indels 5; Gaps 2;

QY 1 MLAMKLFCTCFLQVLAVHS-----QGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCFLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNRPDHSYVE 116  
Db 61 VVSEYPSEVEHMFSPSCVSLLRCTGCCGDEDLHCVPVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCCECRPILETTKAERRKTKGKRKQSK 149  
Db 120 LTFSSHVRCECRPLREKMKPERRRPKGRKRRR 152

GENERAL INFORMATION:  
APPLICANT: PERSICO, MARIA  
APPLICANT: MAGIONE, DOMENICO  
TITLE OF INVENTION: NUCLEOTIDE SEQUENCES CODING FOR A HUMAN  
TITLE OF INVENTION: PROTEIN WITH ANGIOGENESIS REGULATING ACTIVITY

ADDRESS: Evenson, McKeown, Edwards & Lenahan, P.L.L.C.  
STREET: 1200 G Street, N.W., Suite 700  
CITY: Washington  
STATE: DC  
COUNTRY: USA  
ZIP: 20005

COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/569,063C  
FILING DATE: 06-DEC-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/469,427  
FILING DATE: 06-JUN-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/397,651  
FILING DATE: 01-MAR-1995  
ATTORNEY/AGENT INFORMATION:  
NAME: EVANS, Joseph D  
REGISTRATION NUMBER: 26,269  
REFERENCE/DOCKET NUMBER: 1064/41979CP3  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (202) 628-8800  
TELEFAX: (202) 628-8844  
INFORMATION FOR SEQ ID NO: 21:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 149 amino acids  
TYPE: amino acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-569-063C-21

Query Match 56.1%; Score 474.5; DB 2; Length 149;  
Best Local Similarity 64.1%; Pred. No. 1.4e-47;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
QY 1 MLAMKLTFCFLQVLAVHS-----QGALSAGNNSTEMEVVPNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPFCFLQVLAVHS-----QGALSAGNNSTEMEVVPNEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVE 116  
Db 61 VVSEYSEVHEMFSPSCVLLSRCSCGCCGDEGLHCVPVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCCECRPILETTKAER 138  
Db 120 LTFQSHVRCCECRPLREKMKPER 141

RESULT 14  
US-08-795-430-55  
Sequence 55, Application US/08795430  
Patent No. 6130071  
GENERAL INFORMATION:  
APPLICANT: Alitalo, Kari  
APPLICANT: Joukov, Vladimir  
TITLE OF INVENTION: Vascular Endothelial Growth Factor C (VEGF-C)  
TITLE OF INVENTION: Protein and Gene, Mutants Thereof, and Uses Thereof  
NUMBER OF SEQUENCES: 57  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun  
STREET: 6300 Sears Tower, 233 South Wacker Drive  
CITY: Chicago  
STATE: Illinois  
COUNTRY: United States of America  
ZIP: 60606-6402  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/795,430  
FILING DATE:  
CLASSIFICATION: 435

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: PCT/FI96/00427  
FILING DATE: 01-AUG-1996  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/671,573  
FILING DATE: 28-JUN-1996  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/601,132  
FILING DATE: 14-FEB-1996  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/585,895  
FILING DATE: 12-JAN-1996  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/510,133  
FILING DATE: 01-AUG-1995  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/340,011  
FILING DATE: 14-NOV-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Gass, David A.  
REGISTRATION NUMBER: 38,153  
REFERENCE/DOCKET NUMBER: 28967/33691  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 312/474-6300  
TELEFAX: 312/474-0448  
TELEX: 25-3856  
INFORMATION FOR SEQ ID NO: 55:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 149 amino acids  
TYPE: amino acid  
STRANDEDNESS: not relevant  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-795-430-55

Query Match 56.1%; Score 474.5; DB 3; Length 149;  
Best Local Similarity 64.1%; Pred. No. 1.4e-47;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
QY 1 MLAMKLTFCFLQVLAVHS-----QGALSAGNNSTEMEVVPNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPFCFLQVLAVHS-----QGALSAGNNSTEMEVVPNEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVE 116  
Db 61 VVSEYSEVHEMFSPSCVLLSRCSCGCCGDEGLHCVPVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCCECRPILETTKAER 138  
Db 120 LTFQSHVRCCECRPLREKMKPER 141

RESULT 15  
US-08-586-039B-47  
Sequence 47, Application US/08586039B  
Patent No. 6140073  
GENERAL INFORMATION:  
APPLICANT: Bayne, Marvin L.  
APPLICANT: Thomas Jr., Kenneth A.  
TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR C  
TITLE OF INVENTION: SUBUNIT  
NUMBER OF SEQUENCES: 49  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Merck & Co., Inc.  
STREET: 126 E. Lincoln Avenue  
CITY: Rahway  
STATE: New Jersey  
COUNTRY: USA  
ZIP: 07065-0900  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS

Search completed: September 13, 2004, 09:54:49  
Job time : 33 secs



GenCore version 5.1.6  
Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: September 13, 2004, 09:53:35 ; Search time 127 Seconds  
(without alignments)  
398.968 Million cell updates/sec

Title: US-10-071-370A-4

Perfect score: 846

Sequence: 1 MLAMKLFCTFLQVLGLAVH.....RKTGKRKQSKTPQTEEPHL 158

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1335176 seqs, 320689617 residues

Total number of hits satisfying chosen parameters: 1335176

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

## Listing first 45 summaries

Database : .. Published Applications AA:\*

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18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| Result No. | Score | Query % |        | DB | ID                 | Description       |
|------------|-------|---------|--------|----|--------------------|-------------------|
|            |       | Match   | Length |    |                    |                   |
| 1          | 846   | 100.0   | 158    | 14 | US-10-071-370A-4   | Sequence 4, Appli |
| 2          | 740   | 87.5    | 138    | 14 | US-10-071-370A-6   | Sequence 6, Appli |
| 3          | 499.5 | 59.0    | 170    | 9  | US-09-852-209A-9   | Sequence 9, Appli |
| 4          | 499.5 | 59.0    | 170    | 12 | US-10-439-337A-9   | Sequence 9, Appli |
| 5          | 499.5 | 59.0    | 170    | 12 | US-10-303-997B-9   | Sequence 9, Appli |
| 6          | 499.5 | 59.0    | 170    | 12 | US-10-352-153-5    | Sequence 5, Appli |
| 7          | 499.5 | 59.0    | 170    | 14 | US-10-131-600-9    | Sequence 9, Appli |
| 8          | 474.5 | 56.1    | 149    | 9  | US-09-795-006A-115 | Sequence 115, App |
| 9          | 474.5 | 56.1    | 149    | 12 | US-10-211-462-115  | Sequence 115, App |
| 10         | 474.5 | 56.1    | 149    | 14 | US-10-201-386-55   | Sequence 55, Appl |
| 11         | 474.5 | 56.1    | 149    | 14 | US-10-262-538-28   | Sequence 28, Appl |
| 12         | 474.5 | 56.1    | 149    | 14 | US-10-021-660-102  | Sequence 102, App |
| 13         | 474.5 | 56.1    | 149    | 14 | US-10-346-802-5    | Sequence 5, Appli |
| 14         | 474.5 | 56.1    | 149    | 15 | US-10-116-275-226  | Sequence 226, App |
| 15         | 450.5 | 53.3    | 221    | 15 | US-10-440-464-128  | Sequence 128, App |

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|----|-------|------|-----|----|--------------------|-------------------|
| 16 | 365.5 | 43.2 | 163 | 12 | US-10-343-825A-15  | Sequence 15, Appl |
| 17 | 320.5 | 37.9 | 214 | 9  | US-09-349-954A-22  | Sequence 22, Appl |
| 18 | 320.5 | 37.9 | 214 | 9  | US-09-907-007-22   | Sequence 22, Appl |
| 19 | 320.5 | 37.9 | 214 | 12 | US-10-673-708-22   | Sequence 22, Appl |
| 20 | 315.5 | 37.3 | 162 | 10 | US-09-832-355A-60  | Sequence 60, Appl |
| 21 | 315   | 37.2 | 171 | 9  | US-09-812-133-2    | Sequence 2, Appl  |
| 22 | 315   | 37.2 | 188 | 14 | US-10-293-157-28   | Sequence 28, Appl |
| 23 | 315   | 37.2 | 213 | 14 | US-10-268-447-8    | Sequence 8, Appl  |
| 24 | 315   | 37.2 | 215 | 9  | US-09-244-694-3    | Sequence 3, Appl  |
| 25 | 315   | 37.2 | 215 | 12 | US-10-370-291-6    | Sequence 6, Appl  |
| 26 | 315   | 37.2 | 215 | 14 | US-10-392-931-8    | Sequence 8, Appl  |
| 27 | 315   | 37.2 | 215 | 15 | US-10-418-529-8    | Sequence 8, Appl  |
| 28 | 315   | 37.2 | 232 | 9  | US-09-795-006A-147 | Sequence 147, App |
| 29 | 315   | 37.2 | 232 | 10 | US-09-935-726-7    | Sequence 7, Appl  |
| 30 | 315   | 37.2 | 232 | 12 | US-10-370-291-8    | Sequence 8, Appl  |
| 31 | 315   | 37.2 | 232 | 13 | US-10-127-551-5    | Sequence 5, Appl  |
| 32 | 315   | 37.2 | 232 | 13 | US-10-060-523-9    | Sequence 9, Appl  |
| 33 | 315   | 37.2 | 232 | 14 | US-10-084-488-7    | Sequence 7, Appl  |
| 34 | 315   | 37.2 | 232 | 14 | US-10-268-447-10   | Sequence 10, Appl |
| 35 | 315   | 37.2 | 232 | 14 | US-10-120-398-7    | Sequence 7, Appl  |
| 36 | 315   | 37.2 | 232 | 14 | US-10-120-414-7    | Sequence 7, Appl  |
| 37 | 315   | 37.2 | 232 | 14 | US-10-120-377-7    | Sequence 7, Appl  |
| 38 | 315   | 37.2 | 232 | 16 | US-10-696-002-7    | Sequence 7, Appl  |
| 39 | 312.5 | 36.9 | 145 | 13 | US-10-083-817-2    | Sequence 2, Appl  |
| 40 | 312.5 | 36.9 | 145 | 14 | US-10-268-447-4    | Sequence 4, Appl  |
| 41 | 312.5 | 36.9 | 145 | 14 | US-10-319-828-2    | Sequence 2, Appl  |
| 42 | 312.5 | 36.9 | 145 | 14 | US-10-392-931-4    | Sequence 4, Appl  |
| 43 | 312.5 | 36.9 | 145 | 15 | US-10-418-529-8    | Sequence 4, Appl  |
| 44 | 312.5 | 36.9 | 190 | 9  | US-09-813-398-8    | Sequence 8, Appl  |
| 45 | 310   | 36.6 | 154 | 10 | US-09-832-355A-62  | Sequence 62, Appl |

## ALIGNMENTS

## RESULT 1

```

US-10-071-370A-4
; Sequence 4, Application US/10071370A
; Publication No. US20030045471A1
; GENERAL INFORMATION:
; APPLICANT: Bayne, Marvin L.
; APPLICANT: Conn, Gregory L.
; APPLICANT: Thomas, Jr., Kenneth A.
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR
; TITLE OF INVENTION: II
; FILE REFERENCE: 18199CB
; CURRENT APPLICATION NUMBER: US/10/071,370A
; CURRENT FILING DATE: 2002-02-08
; PRIOR APPLICATION NUMBER: 09/326,879
; PRIOR FILING DATE: 1999-06-07
; PRIOR APPLICATION NUMBER: 09/038,199
; PRIOR FILING DATE: 1998-03-10
; PRIOR APPLICATION NUMBER: 08/299,185
; PRIOR FILING DATE: 1994-08-31
; PRIOR APPLICATION NUMBER: 08/000,834
; PRIOR FILING DATE: 1993-01-05
; PRIOR APPLICATION NUMBER: 07/586,638
; PRIOR FILING DATE: 1990-09-21
; NUMBER OF SEQ ID NOS: 29
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 158
; TYPE: PRT
; ORGANISM: rat
US-10-071-370A-4

```

|                           |         |                    |        |             |
|---------------------------|---------|--------------------|--------|-------------|
| Query Match               | 100.0%; | Score 846;         | DB 14; | Length 158; |
| Best Local Similarity     | 100.0%; | Pred. No. 1.1e-83; |        |             |
| Matches 158: Conservative | 0;      | Mismatches         | 0;     | Indels 0;   |
| Gaps                      | 0;      |                    |        |             |

QY 1 MLAMKLFCTFLQVLAVHSQGALSAGNNSTEMEVPFFNEVWGRSYCRPMEKLVYIADE 60

Db 1 MLAMKLFCTFLQVLAVHSQGALSAGNNSTEMEVPFFNEVWGRSYCRPMEKLVYIADE 60

|    |  |     |                                                             |     |
|----|--|-----|-------------------------------------------------------------|-----|
| Qy |  | 61  | HPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTNITMQILKIPPNRDPHSYEMTFSS | 120 |
| Dd |  | 61  | HPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTNITMQILKIPPNRDPHSYEMTFSS | 120 |
| Qy |  | 121 | QDVLCECRPILETTKAERRKTKGKRKSKTPTQTEEPHL                      | 158 |
| Dd |  | 121 | QDVLCECRPILETTKAERRKTKGKRKSKTPTQTEEPHL                      | 158 |

RESULT 2  
US-10-071-370A-6  
; Sequence 6, Application US/10071370A  
; Publication No. US20030045471A1  
; GENERAL INFORMATION:  
; APPLICANT: Bayne, Marvin L.  
; APPLICANT: Conn, Gregory L.  
; APPLICANT: Thomas, Jr., Kenneth A.  
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL CELL GROWTH FACTOR  
; TITLE OF INVENTION: II  
; FILE REFERENCE: 18199CB

```
Query Match      87.5%; Score 740; DB 14; Length 138;
Best Local Similarity 100.0%; Pred. No. 3.1e-72;
Matches 138; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

|    |     |         |         |        |         |         |        |        |        |        |         |
|----|-----|---------|---------|--------|---------|---------|--------|--------|--------|--------|---------|
| QY | 1   | MLAMKLF | TCFLQVL | AGLAVH | SQGLSAG | NNSTEME | VVPFNE | VWGRSY | CRPMEK | LVYIAE | 60      |
|    |     |         |         |        |         |         |        |        |        |        |         |
| Db | 1   | MLAMKLF | TCFLQVL | AGLAVH | SQGLSAG | NNSTEME | VVPFNE | VWGRSY | CRPMEK | LVYIAE | 60      |
|    |     |         |         |        |         |         |        |        |        |        |         |
| QY | 61  | HPNEVSH | IFSPCV  | LLSRCS | GCGDE   | GLHCVA  | LKTNIT | MQILKI | PPNRDP | HSYVEM | TFS 120 |
|    |     |         |         |        |         |         |        |        |        |        |         |
| Db | 61  | HPNEVSH | IFSPCV  | LLSRCS | GCGDE   | GLHCVA  | LKTNIT | MQILKI | PPNRDP | HSYVEM | TFS 120 |
|    |     |         |         |        |         |         |        |        |        |        |         |
| QY | 121 | QDVLCE  | CRPIET  | TTKAER | 138     |         |        |        |        |        |         |
|    |     |         |         |        |         |         |        |        |        |        |         |
| Db | 121 | QDVLCE  | CRPIET  | TTKAER | 138     |         |        |        |        |        |         |
|    |     |         |         |        |         |         |        |        |        |        |         |

RESULT 3  
US-09-852-209A-9  
; Sequence 9, Application US/09852209A  
; Patent No. US20020164687A1  
; GENERAL INFORMATION:  
; APPLICANT: ERIKSSON, Ulf  
; APPLICANT: AASE, Karin  
; APPLICANT: LEE, Xuri  
; APPLICANT: PONTEN, Annica  
; APPLICANT: UUTELA, Marko  
; APPLICANT: ALITALO, Kari  
; APPLICANT: OESTMAN, Arne  
; APPLICANT: HELDIN, Carl-Henrik  
; APPLICANT: BETSHOLTZ, Christer  
; TITLE OF INVENTION: PLATELET-DERIVED GROWTH FACTOR C. DNA CODING

```

; TITLE OF INVENTION: THEREFOR, AND USES THEREOF
; FILE REFERENCE: 09-410349-Eriksson et al-1064-44740
; CURRENT APPLICATION NUMBER: US/09/852,209A
; CURRENT FILING DATE: 2001-05-10
; PRIOR APPLICATION NUMBER: 09/410,349
; PRIOR FILING DATE: 1999-09-30
; PRIOR APPLICATION NUMBER: 60/110,749
; PRIOR FILING DATE: 1998-12-03
; PRIOR APPLICATION NUMBER: 60/113,002
; PRIOR FILING DATE: 1998-12-18
; PRIOR APPLICATION NUMBER: 60/135,426
; PRIOR FILING DATE: 1999-05-21
; PRIOR APPLICATION NUMBER: 60/144,022
; PRIOR FILING DATE: 1999-07-15
; NUMBER OF SEQ ID NOS: 39
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 9
; LENGTH: 170
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-852-209A-9

```

|    | Query Match           | 59.0%;              | Score 499.5;       | DB 9;            | Length 170;       |
|----|-----------------------|---------------------|--------------------|------------------|-------------------|
|    | Best Local Similarity | 61.5%;              | Pred. No. 5.6e-46; |                  |                   |
|    | Matches 96;           | Conservative 23;    | Mismatches 32;     | Indels 5;        | Gaps 2;           |
| QY | 1                     | MLAMKLFTCFLQVLAVHS  | ---QGALSAGNNSTEME  | VVPFNEVWGRSYCRPM | EKL VY 56         |
|    |                       |                     |                    |                  |                   |
|    |                       |                     |                    |                  |                   |
| Db | 1                     | MPVMRLFPFCFLQLLAGL  | PAVPPQQWALSAGNSSE  | VVPFQEVWGRSYCRAL | ERLVD 60          |
|    |                       |                     |                    |                  |                   |
| QY | 57                    | IAD EHPNEVSHTFSPSCV | LLSRCSGCCGDEGLHC   | VALKTANITMQILKIP | PNRDPHS YVE 116   |
|    |                       |                     |                    |                  |                   |
|    |                       |                     |                    |                  |                   |
| Db | 61                    | VVSEYPSEVEHMFSPSCV  | SLLRCTGCCGDEDLHC   | VPVETANVTMQLLKIR | S GDRP - SYVE 119 |
| QY | 117                   | MTFSQDVLCECRPILETT  | KAERRKTKGKRQSKTP   | Q 152            |                   |
|    |                       |                     |                    |                  |                   |
|    |                       |                     |                    |                  |                   |
| Db | 120                   | LTFSOHVRCCEPLREKMK  | PPERRRPKGRKRRENO   | 155              |                   |

RESULT 4  
US-10-439-337A-9  
; Sequence 9, Application US/10439337A  
; Publication No. US20040053837A1  
; GENERAL INFORMATION:  
; APPLICANT: LI, Xuri  
; APPLICANT: ERIKSSON, Ulf  
; APPLICANT: CARMELIET, Peter  
; APPLICANT: COLLUM, Desire  
; TITLE OF INVENTION: COMPOSITION AND METHOD FOR MODULATING VASCULOGENESIS AND  
; TITLE OF INVENTION: ANGIOGENESIS  
; FILE REFERENCE: 029065.44740C4  
; CURRENT APPLICATION NUMBER: US/10/439,337A  
; CURRENT FILING DATE: 2003-05-16  
; PRIOR APPLICATION NUMBER: US 10/303,997  
; PRIOR FILING DATE: 2002-11-26  
; PRIOR APPLICATION NUMBER: US 09/410,349  
; PRIOR FILING DATE: 1999-09-30  
; PRIOR APPLICATION NUMBER: US 60/102,461  
; PRIOR FILING DATE: 1998-09-30  
; PRIOR APPLICATION NUMBER: US 60/108,109  
; PRIOR FILING DATE: 1998-11-12  
; PRIOR APPLICATION NUMBER: US 60/110,749  
; PRIOR FILING DATE: 1998-12-03  
; PRIOR APPLICATION NUMBER: US 60/113,002  
; PRIOR FILING DATE: 1998-12-18  
; PRIOR APPLICATION NUMBER: US 60/135,426  
; PRIOR FILING DATE: 1999-05-21  
; PRIOR APPLICATION NUMBER: US 60/144,022  
; PRIOR FILING DATE: 1999-07-15  
; NUMBER OF SEQ ID NOS: 40  
; SOFTWARE: PatentIn version 3.2  
; SEQ ID NO 9  
; LENGTH: 170

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; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-439-337A-9

Query Match          59.0%; Score 499.5; DB 12; Length 170;
Best Local Similarity 61.5%; Pred. No. 5.6e-46;
Matches 96; Conservative 23; Mismatches 32; Indels 5; Gaps 2;

Qy 1 MLAMKLTCTFLQVLAVHS----QGALSAGNNSTEMEVVFPNEVWGRSYCRPMKLVY 56
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60

Qy 57 IADEHPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNDRDPHSYVE 116
Db 61 VVSEYPSVEVHMFSPSCVLLRCTGCCGDEDLHCVPVETANVTMQLLKIRSGDRP-SYVE 119

Qy 117 MTFSQDVLCECRPILETTKAERRKTKGKRKQSKTPQ 152
Db 120 LTFSQHVRCRPLREKMKPERRRPKGRKRRRENQ 155

RESULT 5
US-10-303-997B-9
; Sequence 9, Application US/10303997B
; Publication No. US20030211994A1
; GENERAL INFORMATION:
; APPLICANT: LI, Xuri
; APPLICANT: ERIKSSON, Ulf
; APPLICANT: CARMELIET, Peter
; APPLICANT: COLLUM, Desire
; TITLE OF INVENTION: COMPOSITION AND METHOD FOR MODULATING VASCULOGENESIS AND ANGIOGEN
; FILE REFERENCE: 029065.44740C3
; CURRENT APPLICATION NUMBER: US/10/303,997B
; CURRENT FILING DATE: 2002-11-26
; PRIOR APPLICATION NUMBER: US 09/410,349
; PRIOR FILING DATE: 1999-09-30
; PRIOR APPLICATION NUMBER: US 60/102,461
; PRIOR FILING DATE: 1998-09-30
; PRIOR APPLICATION NUMBER: US 60/108,109
; PRIOR FILING DATE: 1998-11-12
; PRIOR APPLICATION NUMBER: US 60/110,749
; PRIOR FILING DATE: 1998-12-03
; PRIOR APPLICATION NUMBER: US 60/113,002
; PRIOR FILING DATE: 1998-12-18
; PRIOR APPLICATION NUMBER: US 60/135,426
; PRIOR FILING DATE: 1999-05-21
; PRIOR APPLICATION NUMBER: US 60/144,022
; PRIOR FILING DATE: 1999-07-15
; NUMBER OF SEQ ID NOS: 40
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 9
; LENGTH: 170
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-303-997B-9

Query Match          59.0%; Score 499.5; DB 12; Length 170;
Best Local Similarity 61.5%; Pred. No. 5.6e-46;
Matches 96; Conservative 23; Mismatches 32; Indels 5; Gaps 2;

Qy 1 MLAMKLTCTFLQVLAVHS----QGALSAGNNSTEMEVVFPNEVWGRSYCRPMKLVY 56
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60

Qy 57 IADEHPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNDRDPHSYVE 116
Db 61 VVSEYPSVEVHMFSPSCVLLRCTGCCGDEDLHCVPVETANVTMQLLKIRSGDRP-SYVE 119

Qy 117 MTFSQDVLCECRPILETTKAERRKTKGKRKQSKTPQ 152
Db 120 LTFSQHVRCRPLREKMKPERRRPKGRKRRRENQ 155
```

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RESULT 6
US-10-352-153-5
; Sequence 5, Application US/10352153
; Publication No. US20030211101A1
; GENERAL INFORMATION:
; APPLICANT: Wise, Lyn M
; APPLICANT: Mercer, Andrew A
; APPLICANT: Savory, Loreen J
; APPLICANT: Fleming, Stephen B
; APPLICANT: Stacker, Stephen
; TITLE OF INVENTION: VASCULAR ENOTHELIAL GROWTH FACTOR-LIKE PROTEIN FROM ORF
; TITLE OF INVENTION: VIRUS NZ2 BINDS AND ACTIVATES MAMMALIAN VEGF
; FILE REFERENCE: RECEPTOR-2, AND USES THEREOF
; FILE REFERENCE: Sequence Listing for 09/431,833
; CURRENT APPLICATION NUMBER: US/10/352,153
; CURRENT FILING DATE: 2003-01-28
; PRIOR APPLICATION NUMBER: US/09/431,888A
; PRIOR FILING DATE: 1999-11-02
; PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/106,689
; PRIOR FILING DATE: EARLIER FILING DATE: 1998-11-02
; PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/106,800
; PRIOR FILING DATE: EARLIER FILING DATE: 1998-11-03
; NUMBER OF SEQ ID NOS: 11
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 5
; LENGTH: 170
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-352-153-5

Query Match          59.0%; Score 499.5; DB 12; Length 170;
Best Local Similarity 61.5%; Pred. No. 5.6e-46;
Matches 96; Conservative 23; Mismatches 32; Indels 5; Gaps 2;

Qy 1 MLAMKLTCTFLQVLAVHS----QGALSAGNNSTEMEVVFPNEVWGRSYCRPMKLVY 56
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60

Qy 57 IADEHPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKIPNDRDPHSYVE 116
Db 61 VVSEYPSVEVHMFSPSCVLLRCTGCCGDEDLHCVPVETANVTMQLLKIRSGDRP-SYVE 119

Qy 117 MTFSQDVLCECRPILETTKAERRKTKGKRKQSKTPQ 152
Db 120 LTFSQHVRCRPLREKMKPERRRPKGRKRRRENQ 155

RESULT 7
US-10-131-600-9
; Sequence 9, Application US/10131600
; Publication No. US20030082670A1
; GENERAL INFORMATION:
; APPLICANT: ERIKSSON, Ulf
; APPLICANT: AASE, Karin
; APPLICANT: LEE, Xuri
; APPLICANT: PONTEN, Annica
; APPLICANT: UUTELA, Marko
; APPLICANT: ALITALO, Kari
; APPLICANT: OESTMAN, Arne
; APPLICANT: HELDIN, Carl-Henrik
; APPLICANT: BETSHOLTZ, Christer
; TITLE OF INVENTION: PLATELET-DERIVED GROWTH FACTOR C, DNA CODING
; TITLE OF INVENTION: THEREFOR, AND USES THEREOF
; FILE REFERENCE: 09-410349-Eriksson et al-1064-44740
; CURRENT APPLICATION NUMBER: US/10/131,600
; CURRENT FILING DATE: 2002-04-25
; PRIOR APPLICATION NUMBER: US/09/410,349
; PRIOR FILING DATE: 1999-09-30
; PRIOR APPLICATION NUMBER: 60/108,109
; PRIOR FILING DATE: 1998-11-12
; PRIOR APPLICATION NUMBER: 60/110,749
; PRIOR FILING DATE: 1998-12-03
; PRIOR APPLICATION NUMBER: 60/113,002
```

```

; Publication No. US20040033495A1
; GENERAL INFORMATION:
; APPLICANT: Murray, Richard
; APPLICANT: Glynnne, Richard
; APPLICANT: Watson, Susan R.
; APPLICANT: Aziz, Natasha
; APPLICANT: Eos Biotechnology, Inc.
; TITLE OF INVENTION: Methods of Diagnosis of Angiogenesis, Compositions and
; TITLE OF INVENTION: Methods of Screening for Angiogenesis Modulators
; FILE REFERENCE: 018501-006200US
; CURRENT APPLICATION NUMBER: US/10/211,462
; CURRENT FILING DATE: 2003-02-13
; PRIOR APPLICATION NUMBER: US 09/784,356
; PRIOR FILING DATE: 2001-02-14
; PRIOR APPLICATION NUMBER: US 09/791,390
; PRIOR FILING DATE: 2001-02-22
; PRIOR APPLICATION NUMBER: US 60/310,025
; PRIOR FILING DATE: 2001-08-03
; PRIOR APPLICATION NUMBER: US 60/334,244
; PRIOR FILING DATE: 2001-11-29
; NUMBER OF SEQ ID NOS: 230
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 115
; LENGTH: 149
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-211-462-115

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[illegible]

RESULT 10  
 US-10-201-386-55  
 ; Sequence 55, Application US/10201386  
 ; Publication No. US20030091567A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Alitalo, Kari  
 ; APPLICANT: Joukov, Vladimir  
 ; TITLE OF INVENTION: VASCULAR ENDOTHELIAL GROWTH FACTOR C (VEGF-C) PROTEIN  
 ; TITLE OF INVENTION: AND GENE, MUTANTS THEREOF, AND USES THEREOF  
 ; FILE REFERENCE: 28967/34140A  
 ; CURRENT APPLICATION NUMBER: US/10/201,386  
 ; CURRENT FILING DATE: 2002-07-23  
 ; PRIOR APPLICATION NUMBER: US/09/534,376  
 ; PRIOR FILING DATE: 2000-03-24  
 ; PRIOR APPLICATION NUMBER: 09/355,700  
 ; PRIOR FILING DATE: 1999-11-05  
 ; PRIOR APPLICATION NUMBER: PCT/US98/01973  
 ; PRIOR FILING DATE: 1998-02-02  
 ; PRIOR APPLICATION NUMBER: 08/795,430  
 ; PRIOR FILING DATE: 1997-02-05  
 ; PRIOR APPLICATION NUMBER: PCT/FI96/00427  
 ; PRIOR FILING DATE: 1996-08-01  
 ; PRIOR APPLICATION NUMBER: 08/671,573  
 ; PRIOR FILING DATE: 1996-06-28  
 ; PRIOR APPLICATION NUMBER: 08/601,132  
 ; PRIOR FILING DATE: 1996-02-14  
 ; PRIOR APPLICATION NUMBER: 08/585,895  
 ; PRIOR FILING DATE: 1996-01-12

RESULT 9  
US-10-211-462-115  
; Sequence 115, Application US/10211462



; PRIOR APPLICATION NUMBER: 08/510,133  
; PRIOR FILING DATE: 1995-08-01  
; PRIOR APPLICATION NUMBER: 08/340,011  
; PRIOR FILING DATE: 1994-11-14  
; NUMBER OF SEQ ID NOS: 59  
; SOFTWARE: PatentIn Ver. 2.0  
; SEQ ID NO 55  
; LENGTH: 149  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
; FEATURE:  
; OTHER INFORMATION: Human PIGF  
US-10-201-386-55

Query Match 56.1%; Score 474.5; DB 14; Length 149;  
Best Local Similarity 64.1%; Pred. No. 2.5e-43;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
  
QY 1 MLAMKLTCTFLQVLAVHS-----QGALSAGNNSTEMEVVPPFNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVPPFQEVWGRSYCRALERLVD 60  
  
QY 57 IADEHPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVE 116  
Db 61 VVSEYPPSEVHEMFSPSCVLLRCTGCCGDENLHCVPTANVTMQLLKIRSGDRP-SYVE 119  
  
QY 117 MTFSDVLCCECRPILETTKAER 138  
Db 120 LTFSQHVRCERPLREKMKPER 141

RESULT 11  
US-10-262-538-28  
; Sequence 28, Application US/10262538  
; Publication No. US20030113324A1  
; GENERAL INFORMATION:  
; APPLICANT: Alitalo et al  
; TITLE OF INVENTION: NEUROPILIN/VEGF-C/VEGFR-3 MATERIALS AND METHODS  
; FILE REFERENCE: 28967/37564  
; CURRENT APPLICATION NUMBER: US/10/262,538  
; CURRENT FILING DATE: 2002-09-30  
; NUMBER OF SEQ ID NOS: 33  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 28  
; LENGTH: 149  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-10-262-538-28

Query Match 56.1%; Score 474.5; DB 14; Length 149;  
Best Local Similarity 64.1%; Pred. No. 2.5e-43;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
  
QY 1 MLAMKLTCTFLQVLAVHS-----QGALSAGNNSTEMEVVPPFNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVPPFQEVWGRSYCRALERLVD 60  
  
QY 57 IADEHPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVE 116  
Db 61 VVSEYPPSEVHEMFSPSCVLLRCTGCCGDENLHCVPTANVTMQLLKIRSGDRP-SYVE 119  
  
QY 117 MTFSDVLCCECRPILETTKAER 138  
Db 120 LTFSQHVRCERPLREKMKPER 141

RESULT 12  
US-10-021-660-102  
; Sequence 102, Application US/10021660  
; Publication No. US20030152926A1  
; GENERAL INFORMATION:  
; APPLICANT: Murray, Richard  
; APPLICANT: Glynn, Richard

; APPLICANT: Watson, Susan R.  
; APPLICANT: EOS Biotechnology, Inc.  
; TITLE OF INVENTION: No. US20030152926A1el Methods of Diagnosis of Angiogenesis,  
; TITLE OF INVENTION: Compositions and Methods of Screening for Angiogenesis  
; TITLE OF INVENTION: Modulators  
; FILE REFERENCE: 018501-000710US  
; CURRENT APPLICATION NUMBER: US/10/021,660  
; CURRENT FILING DATE: 2001-12-06  
; PRIOR APPLICATION NUMBER: US/09/784,356  
; PRIOR FILING DATE: 2001-02-14  
; PRIOR APPLICATION NUMBER: US 09/637,977  
; PRIOR FILING DATE: 2000-08-11  
; NUMBER OF SEQ ID NOS: 135  
; SOFTWARE: FastSeq for Windows Version 3.0  
; SEQ ID NO 102  
; LENGTH: 149  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-10-021-660-102

Query Match 56.1%; Score 474.5; DB 14; Length 149;  
Best Local Similarity 64.1%; Pred. No. 2.5e-43;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
  
QY 1 MLAMKLTCTFLQVLAVHS-----QGALSAGNNSTEMEVVPPFNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVPPFQEVWGRSYCRALERLVD 60  
  
QY 57 IADEHPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVE 116  
Db 61 VVSEYPPSEVHEMFSPSCVLLRCTGCCGDENLHCVPTANVTMQLLKIRSGDRP-SYVE 119  
  
QY 117 MTFSDVLCCECRPILETTKAER 138  
Db 120 LTFSQHVRCERPLREKMKPER 141

RESULT 13  
US-10-346-802-5  
; Sequence 5, Application US/10346802  
; Publication No. US20030166873A1  
; GENERAL INFORMATION:  
; APPLICANT: Lee, James  
; APPLICANT: Wood, William I.  
; TITLE OF INVENTION: VEGF-RELATED PROTEIN  
; FILE REFERENCE: P0963R1D1  
; CURRENT APPLICATION NUMBER: US/10/346,802  
; CURRENT FILING DATE: 2003-01-17  
; PRIOR APPLICATION NUMBER: US/09/313,299B  
; PRIOR FILING DATE: 1999-05-17  
; PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 08/706,054  
; PRIOR FILING DATE: EARLIER FILING DATE: 1996-08-30  
; PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 60/003,491  
; PRIOR FILING DATE: EARLIER FILING DATE: 1995-09-08  
; NUMBER OF SEQ ID NOS: 12  
; SEQ ID NO 5  
; LENGTH: 149  
; TYPE: PRT  
; ORGANISM: Human  
; FEATURE:  
; NAME/KEY: Human  
; LOCATION: 1-149  
; OTHER INFORMATION: Sequence source: PIGE-131  
US-10-346-802-5

Query Match 56.1%; Score 474.5; DB 14; Length 149;  
Best Local Similarity 64.1%; Pred. No. 2.5e-43;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
  
QY 1 MLAMKLTCTFLQVLAVHS-----QGALSAGNNSTEMEVVPPFNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPFCFLQLLAGLALPAVPPQQWALSAGNSSEVEVPPFQEVWGRSYCRALERLVD 60

QY 57 IADHPNEVSHIFSPCVLLSRCSCGCCGDEGLHCVALKTANITMQLKIPNDRDPHSYVE 116  
Db 61 VVSEYPSEVHEMFSPCVSLLRCTGCCGDENLHCVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCRPILETTKAER 138  
Db 120 LTFQHVRCRCPLEKMKPER 141

RESULT 14  
US-10-116-275-226  
; Sequence 226, Application US/10116275  
; Publication No. US20030211476A1  
; GENERAL INFORMATION:  
; APPLICANT: Elan Pharmaceutical Technology  
; APPLICANT: O'Mahony, Daniel J.  
; APPLICANT: Brayden, David  
; APPLICANT: Byrne, Daragh  
; APPLICANT: Lambkin, Imelda  
; APPLICANT: Higgins, Lisa  
; TITLE OF INVENTION: Genetic Analysis of Peyer's Patches and M Cells and Methods and  
; TITLE OF INVENTION: Compositions Targeting Peyer's Patches and M Cell Receptors  
; FILE REFERENCE: E1067/20087  
; CURRENT APPLICATION NUMBER: US/10/116,275  
; CURRENT FILING DATE: 2002-10-04  
; NUMBER OF SEQ ID NOS: 349  
; SOFTWARE: Patentin version 3.1  
; SEQ ID NO 226  
; LENGTH: 149  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-10-116-275-226

Query Match 56.1%; Score 474.5; DB 15; Length 149;  
Best Local Similarity 64.1%; Pred. No. 2.5e-43;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;  
QY 1 MLAMKLTCTFLQVLAVHS---QGALSAGNNSTEMEVVPEVNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60  
QY 57 IADHPNEVSHIFSPCVLLSRCSCGCCGDEGLHCVALKTANITMQLKIPNDRDPHSYVE 116  
Db 61 VVSEYPSEVHEMFSPCVSLLRCTGCCGDENLHCVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCRPILETTKAER 138  
Db 120 LTFQHVRCRCPLEKMKPER 141

RESULT 15  
US-10-440-464-128  
; Sequence 128, Application US/10440464  
; Publication No. US20040018528A1  
; GENERAL INFORMATION:  
; APPLICANT: DEPRIMO, SAMUEL  
; APPLICANT: O'FARRELL, ANNE-MARIE  
; APPLICANT: MORIMOTO, ALYSSA  
; APPLICANT: SMOLICH, BEVERLY  
; APPLICANT: MANNING, WILLIAM  
; APPLICANT: WALTER, SARAH  
; APPLICANT: CHERRINGTON, JULIE  
; APPLICANT: SCHILLING, JIM  
; TITLE OF INVENTION: NOVEL BIOMARKERS OF TYROSINE KINASE INHIBITOR EXPOSURE  
; TITLE OF INVENTION: AND ACTIVITY IN MAMMALS  
; FILE REFERENCE: 038602/1592  
; CURRENT APPLICATION NUMBER: US/10/440,464  
; CURRENT FILING DATE: 2003-05-19  
; PRIOR APPLICATION NUMBER: 60/380,872  
; PRIOR FILING DATE: 2002-05-17  
; PRIOR APPLICATION NUMBER: 60/448,922  
; PRIOR FILING DATE: 2003-02-24  
; PRIOR APPLICATION NUMBER: 60/448,874

; PRIOR FILING DATE: 2003-02-24  
; NUMBER OF SEQ ID NOS: 185  
; SOFTWARE: Patentin Ver. 2.1  
; SEQ ID NO 128  
; LENGTH: 221  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-10-440-464-128

Query Match 53.3%; Score 450.5; DB 15; Length 221;  
Best Local Similarity 65.2%; Pred. No. 1.7e-40;  
Matches 86; Conservative 18; Mismatches 23; Indels 5; Gaps 2;  
QY 1 MLAMKLTCTFLQVLAVHS---QGALSAGNNSTEMEVVPEVNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCLQLLAGLALPAVPPQQWALSAGNSSEVEVVPFQEVWGRSYCRALERLVD 60  
QY 57 IADHPNEVSHIFSPCVLLSRCSCGCCGDEGLHCVALKTANITMQLKIPNDRDPHSYVE 116  
Db 61 VVSEYPSEVHEMFSPCVSLLRCTGCCGDENLHCVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCR 128  
Db 120 LTFQHVRCR 131

Search completed: September 13, 2004, 10:05:10  
Job time : 128 secs

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OM protein - protein search, using sw model

Run on: September 13, 2004, 09:34:08 ; Search time 23 Seconds  
(without alignments)  
357.699 Million cell updates/sec

Title: US-10-071-370A-4  
Perfect score: 846  
Sequence: 1 MLAMKLTCTFLQVLGLAVH.....RKTGKRKQSKTPQTEPHL 158

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : SwissProt\_42:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description                    |
|------------|-------|-------------|--------|-------|--------------------------------|
| 1          | 846   | 100.0       | 158    | 1     | PLGF RAT Q63434 rattus norv    |
| 2          | 785   | 92.8        | 158    | 1     | PLGF_MOUSE P49764 mus musculus |
| 3          | 450.5 | 53.3        | 221    | 1     | PLGF_HUMAN P49763 homo sapien  |
| 4          | 426.5 | 50.4        | 149    | 1     | PLGF_BOVIN Q9xs47 bos taurus   |
| 5          | 322.5 | 38.1        | 214    | 1     | VEGA_CANFA Q9myv3 canis famil  |
| 6          | 320.5 | 37.9        | 214    | 1     | VEGA_MOUSE Q00731 mus musculus |
| 7          | 319.5 | 37.8        | 214    | 1     | VEGA_RAT P16612 rattus norv    |
| 8          | 315   | 37.2        | 232    | 1     | VEGA_HUMAN P15692 homo sapien  |
| 9          | 296.5 | 35.0        | 190    | 1     | VEGA_PIG P49151 sus scrofa     |
| 10         | 294.5 | 34.8        | 190    | 1     | VEGA_HORSE Q9gkr0 equus cabal  |
| 11         | 291.5 | 34.5        | 216    | 1     | VEGA_CHICK P52582 gallus gall  |
| 12         | 283.5 | 33.5        | 190    | 1     | VEGA_BOVIN P15691 bos taurus   |
| 13         | 282.5 | 33.4        | 190    | 1     | VEGA_MESAU Q99ps1 mesocricetu  |
| 14         | 282   | 33.3        | 146    | 1     | VEGA_SHEEP P50412 ovis aries   |
| 15         | 280.5 | 33.2        | 164    | 1     | VEGA_CAVPO P26617 cavia porce  |
| 16         | 189   | 22.3        | 133    | 1     | VEGH_ORFN2 P52584 orf virus (  |
| 17         | 188   | 22.2        | 207    | 1     | VEGB_MOUSE P49766 mus musculus |
| 18         | 182   | 21.5        | 207    | 1     | VEGB_HUMAN P49765 homo sapien  |
| 19         | 179.5 | 21.2        | 207    | 1     | VEGB_BOVIN Q9xs49 bos taurus   |
| 20         | 179   | 21.2        | 135    | 1     | VEGB_RAT O35485 rattus norv    |
| 21         | 174   | 20.6        | 358    | 1     | VEGD_MOUSE P97946 mus musculus |
| 22         | 167   | 19.7        | 148    | 1     | VEGH_ORFN7 P52585 orf virus (  |
| 23         | 158   | 18.7        | 354    | 1     | VEGD_HUMAN O43915 homo sapien  |
| 24         | 153   | 18.1        | 326    | 1     | VEGD_RAT O35251 rattus norv    |
| 25         | 144   | 17.0        | 419    | 1     | VEGC_HUMAN P49767 homo sapien  |
| 26         | 140   | 16.5        | 415    | 1     | VEGC_MOUSE P97953 mus musculus |
| 27         | 114   | 13.5        | 225    | 1     | PDGB_RAT Q05028 rattus norv    |
| 28         | 112   | 13.2        | 241    | 1     | PDGB_MOUSE P31240 mus musculus |
| 29         | 110   | 13.0        | 245    | 1     | PDGB_FELCA P12919 felis silve  |
| 30         | 108   | 12.8        | 241    | 1     | PDGB_HUMAN P01127 homo sapien  |
| 31         | 105.5 | 12.5        | 241    | 1     | PDGB_SHEEP Q95229 ovis aries   |
| 32         | 99.5  | 11.8        | 213    | 1     | PDGA_RABIT P34007 oryctolagus  |
| 33         | 96.5  | 11.4        | 226    | 1     | TSIS_SNSAV P01128 simian sarc  |

|          |                                                                            |          |           |      |            |  |  |  |  |
|----------|----------------------------------------------------------------------------|----------|-----------|------|------------|--|--|--|--|
| RESULT 1 |                                                                            |          |           |      | ALIGNMENTS |  |  |  |  |
| PLGF_RAT | ID                                                                         | PLGF_RAT | STANDARD; | PRT; | 158 AA.    |  |  |  |  |
| AC       | Q63434;                                                                    |          |           |      |            |  |  |  |  |
| DT       | 28-FEB-2003 (Rel. 41, Created)                                             |          |           |      |            |  |  |  |  |
| DT       | 28-FEB-2003 (Rel. 41, Last sequence update)                                |          |           |      |            |  |  |  |  |
| DT       | 10-OCT-2003 (Rel. 42, Last annotation update)                              |          |           |      |            |  |  |  |  |
| DE       | Placenta growth factor precursor (PLGF).                                   |          |           |      |            |  |  |  |  |
| GN       | PLGF.                                                                      |          |           |      |            |  |  |  |  |
| OS       | Rattus norvegicus (Rat).                                                   |          |           |      |            |  |  |  |  |
| OC       | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;          |          |           |      |            |  |  |  |  |
| OC       | Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.      |          |           |      |            |  |  |  |  |
| OX       | NCBI_TaxID=10116;                                                          |          |           |      |            |  |  |  |  |
| RN       | [1]                                                                        |          |           |      |            |  |  |  |  |
| RP       | SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.                                  |          |           |      |            |  |  |  |  |
| RX       | MEDLINE=95221439; Pubmed=7706320;                                          |          |           |      |            |  |  |  |  |
| RA       | DiSalvo J., Bayne M.L., Conn G., Kwok P.W., Trivedi P.G.,                  |          |           |      |            |  |  |  |  |
| RA       | Soderman D.D., Palisi T.M., Sullivan K.A., Thomas K.A.;                    |          |           |      |            |  |  |  |  |
| RT       | "Purification and characterization of a naturally occurring vascular       |          |           |      |            |  |  |  |  |
| RT       | endothelial growth factor.placenta growth factor heterodimer.";            |          |           |      |            |  |  |  |  |
| RL       | J. Biol. Chem. 270:7717-7723(1995).                                        |          |           |      |            |  |  |  |  |
| CC       | -!- FUNCTION: Growth factor active in angiogenesis, and endothelial        |          |           |      |            |  |  |  |  |
| CC       | cell growth, stimulating their proliferation and migration. It             |          |           |      |            |  |  |  |  |
| CC       | binds to receptor VEGFR-1/Flt1 (By similarity).                            |          |           |      |            |  |  |  |  |
| CC       | -!- SUBUNIT: Antiparallel homodimer; disulfide-linked. Also found as       |          |           |      |            |  |  |  |  |
| CC       | heterodimer with VEGF/VEGF-A.                                              |          |           |      |            |  |  |  |  |
| CC       | -!- SUBCELLULAR LOCATION: Secreted (By similarity).                        |          |           |      |            |  |  |  |  |
| CC       | -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.             |          |           |      |            |  |  |  |  |
| CC       | -----                                                                      |          |           |      |            |  |  |  |  |
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| CC       | or send an email to license@isb-sib.ch).                                   |          |           |      |            |  |  |  |  |
| CC       | -----                                                                      |          |           |      |            |  |  |  |  |
| DR       | EMBL; L40030; AAA97426.1; -.                                               |          |           |      |            |  |  |  |  |
| DR       | PIR; A56125; A56125.                                                       |          |           |      |            |  |  |  |  |
| DR       | HSSP; P49763; 1FZV.                                                        |          |           |      |            |  |  |  |  |
| DR       | InterPro; IPR000072; PD_growth_factor.                                     |          |           |      |            |  |  |  |  |
| DR       | Pfam; PF00341; PDGF; 1.                                                    |          |           |      |            |  |  |  |  |
| DR       | ProDom; PD001629; PD_growth_factor; 1.                                     |          |           |      |            |  |  |  |  |
| DR       | SMART; SM00141; PDGF; 1.                                                   |          |           |      |            |  |  |  |  |
| DR       | PROSITE; PS00249; PDGF_1; 1.                                               |          |           |      |            |  |  |  |  |
| DR       | PROSITE; PS0278; PDGF_2; 1.                                                |          |           |      |            |  |  |  |  |
| DR       | Angiogenesis; Mitogen; Growth factor; Glycoprotein; Signal.                |          |           |      |            |  |  |  |  |
| KW       | SIGNAL 1 23                                                                |          |           |      |            |  |  |  |  |
| FT       | CHAIN 24 158                                                               |          |           |      |            |  |  |  |  |
| FT       | DISULFID 48 90                                                             |          |           |      |            |  |  |  |  |
| FT       | DISULFID 79 125                                                            |          |           |      |            |  |  |  |  |
| FT       | DISULFID 83 127                                                            |          |           |      |            |  |  |  |  |
| FT       | DISULFID 73 73                                                             |          |           |      |            |  |  |  |  |
| FT       | DISULFID 82 82                                                             |          |           |      |            |  |  |  |  |
| FT       | CARBOHYD 29 29                                                             |          |           |      |            |  |  |  |  |
| FT       | CARBOHYD 30 30                                                             |          |           |      |            |  |  |  |  |

P20033 mus musculu  
P28576 rattus norv  
P04085 homo sapien  
O35757 rattus norv  
P13698 xenopus lae  
Q8wxi4 homo sapien  
P30970 acanthopagr  
P06607 drosophila  
Q8vib2 rattus norv  
P19951 zea mays (m  
P46295 chlamydomon

FT CARBOHYD 97 97 N-LINKED (GLCNAC. . .).  
SQ SEQUENCE 158 AA; 17681 MW; B4771373A82E15B9 CRC64;  
  
Query Match 100.0%; Score 846; DB 1; Length 158;  
Best Local Similarity 100.0%; Pred. No. 5.1e-81;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFPNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFPNEVWGRSYCRPMEKLVYIADE 60  
  
QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
Db 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
  
QY 121 QDVLCCECPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
Db 121 QDVLCCECPILETTKAERRKTKGKRKQSKTPQTEEPHL 158  
  
RESULT 2  
PLGF MOUSE  
ID PLGF MOUSE STANDARD; PRT; 158 AA.  
AC P49764;  
DT 01-OCT-1996 (Rel. 34, Created)  
DT 01-OCT-1996 (Rel. 34, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Placenta growth factor precursor (PLGF).  
GN PGF OR PLGF.  
OS Mus musculus (Mouse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
OX NCBI\_TaxID=10090;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Heart;  
RX MEDLINE=97059399; PubMed=8903720;  
RA Dipalma T., Tucci M., Russo G., Maglione D., Lago C.T., Romano A.,  
RA Saccone S., della Valle G., de Gregorio L., Dragani T.A.,  
RA Viglietto G., Persico M.G.;  
RT "The placenta growth factor gene of the mouse.";  
RL Mamm. Genome 7:6-12(1996).  
RN [2]  
RP SEQUENCE FROM N.A.  
RC STRAIN=NIH Swiss;  
RX MEDLINE=98065381; PubMed=9401819;  
RA Achen M.G., Gad J.M., Stacker S.A., Wilks A.F.;  
RT "Placenta growth factor and vascular endothelial growth factor are  
RT co-expressed during early embryonic development.";  
RL Growth Factors 15:69-80(1997).  
CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial  
CC cell growth, stimulating their proliferation and migration. It  
CC binds to receptor VEGFR-1/FLT1 (By similarity).  
CC -!- SUBUNIT: Antiparallel homodimer; disulfide-linked. Also found as  
CC heterodimer with VEGF/VEGF-A (By similarity).  
CC -!- SUBCELLULAR LOCATION: Secreted (By similarity).  
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.  
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DR EMBL; X80171; CAA56453.1; -.  
DR EMBL; X96793; CAA65587.1; -.  
DR HSSP; P49763; 1FZV.  
DR MGD; MGI:105095; Pgf.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR ProDom; PD001629; PD\_growth\_factor; 1.

DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS0278; PDGF\_2; 1.  
KW Angiogenesis; Mitogen; Growth factor; Glycoprotein; Signal.  
FT SIGNAL 1 18 BY SIMILARITY.  
FT CHAIN 19 158 PLACENTA GROWTH FACTOR.  
FT DISULFID 48 90 BY SIMILARITY.  
FT DISULFID 79 125 BY SIMILARITY.  
FT DISULFID 83 127 BY SIMILARITY.  
FT DISULFID 73 73 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 82 82 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 29 29 N-LINKED (GLCNAC. . .) (POTENTIAL).  
FT CARBOHYD 30 30 N-LINKED (GLCNAC. . .) (POTENTIAL).  
FT CARBOHYD 97 97 N-LINKED (GLCNAC. . .) (POTENTIAL).  
SQ SEQUENCE 158 AA; 17876 MW; F16128BEA0790438 CRC64;  
  
Query Match 92.8%; Score 785; DB 1; Length 158;  
Best Local Similarity 92.4%; Pred. No. 1.2e-74;  
Matches 145; Conservative 6; Mismatches 6; Indels 0; Gaps 0;  
  
QY 1 MLAMKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFPNEVWGRSYCRPMEKLVYIADE 60  
Db 1 MLVVKLTFCFLQVLAVHSQGLSAGNNSSTEMEVVFPNEVWGRSYCRPMEKLVYILDE 60  
  
QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFS 120  
Db 61 YPDEVSHIFSPSCVLLSRCSCGCCGDEGLHCVPKIKTANITMQILKIPPNRDPHSYVEMTFS 120  
  
QY 121 QDVLCCECPILETTKAERRKTKGKRKQSKTPQTEEPH 157  
Db 121 QDVLCCECPILETTKAERRKTKGKRKRSRNSQTEEPH 157  
  
RESULT 3  
PLGF HUMAN  
ID PLGF HUMAN STANDARD; PRT; 221 AA.  
AC P49763; Q07101; Q9BV78; Q9Y6S8;  
DT 01-OCT-1996 (Rel. 34, Created)  
DT 28-FEB-2003 (Rel. 41, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Placenta growth factor precursor (PLGF).  
GN PGF OR PLGF.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A. (ISOFORM PLGF-1).  
RC TISSUE=Placenta;  
RX MEDLINE=92021031; PubMed=1924389;  
RA Maglione D., Guerriero V., Viglietto G., Delli-Bovi P., Persico M.G.;  
RT "Isolation of a human placenta cDNA coding for a protein related to  
RT the vascular permeability factor.";  
RL Proc. Natl. Acad. Sci. U.S.A. 88:9267-9271(1991).  
RN [2]  
RP SEQUENCE FROM N.A. (ISOFORM PLGF-2).  
RC TISSUE=Placenta;  
RX MEDLINE=94198032; PubMed=8148155;  
RA Hauser S.D., Weich H.A.;  
RT "A heparin-binding form of placenta growth factor (PLGF-2) is  
RT expressed in human umbilical vein endothelial cells and in  
RT placenta.";  
RL Growth Factors 9:259-268(1993).  
RN [3]  
RP PARTIAL SEQUENCE FROM N.A. (ISOFORM PLGF-2).  
RX MEDLINE=93205407; PubMed=7681160;  
RA Maglione D., Guerriero V., Viglietto G., Ferraro M.G., Aprelikova O.,  
RA Alitalo K., del Vecchio S., Lei K.-J., Chou J.-Y., Persico M.G.;  
RT "Two alternative mRNAs coding for the angiogenic factor, placenta  
RT growth factor (PLGF), are transcribed from a single gene of  
RT chromosome 14.";  
RL Oncogene 8:925-931(1993).  
RN [4]







```
CC      Name=VEGF-188;
CC      IsoId=Q9MYV3-1; Sequence=Displayed;
CC      Name=VEGF-182;
CC      IsoId=Q9MYV3-2; Sequence=VSP_004617;
CC      Name=VEGF-164;
CC      IsoId=Q9MYV3-3; Sequence=VSP_004615, VSP_004616;
CC      SIMILARITY: Belongs to the PDGF/VEGF growth factor family.
CC      -----
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CC      or send an email to license@isb-sib.ch).
CC      -----
CC      EMBL; AJ133758; CAB82426.1; -.
CC      EMBL; AF133250; AAD29684.1; -.
CC      EMBL; AF133249; AAD29683.1; -.
CC      EMBL; AF133248; AAD29682.1; -.
CC      HSSP; P15692; LVGH.
CC      InterPro; IPR000072; PD_growth_factor.
CC      Pfam; PF00341; PDGF; 1.
CC      ProDom; PD001629; PD_growth_factor; 1.
CC      SMART; SM00141; PDGF; 1.
CC      PROSITE; PS00249; PDGF_1; 1.
CC      PROSITE; PS0278; PDGF_2; 1.
CC      Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
CC      Heparin-binding; Alternative splicing; Multigene family.
CC      SIGNAL 1 26
CC      CHAIN 27 214
CC      DISULFID 51 93
CC      DISULFID 82 127
CC      DISULFID 86 129
CC      DISULFID 76 76
CC      DISULFID 85 85
CC      CARBOHYD 100 100
CC      VARSPLIC 140 140
CC      VARSPLIC 141 164
CC      VARSPLIC 159 164
CC      CONFLICT 143 143
CC      CONFLICT 161 161
CC      SEQUENCE 214 AA; 25175 MW; 0AC980A158C44B27 CRC64;
CC      Query Match 38.1%; Score 322.5; DB 1; Length 214;
CC      Best Local Similarity 49.6%; Pred. No. 2.5e-26;
CC      Matches 64; Conservative 18; Mismatches 46; Indels 1; Gaps 1;
Qy      21 SQGALSAGNNSTEMEVVPFNEVWGRSYCRPMKLVYIADEHPNEVSHIFSPSCVLLSRC 80
Db      24 SQAAPMAGGEHKPHEVVKFMDVYQSYCRPIETLVDIFQYDDEIYIFKPSCVPLMRG 83
Qy      81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSDVLCERPILETTKAERRK 140
Db      84 GCCNDEGLECVPTTEFNITMQIMRIKPHQGH-IGEMSFQHSKCECRPKKDRARQEK 142
Qy      141 TKGKRQSK 149
Db      143 IRGKGQX 151
RESULT 6
VEGA_MOUSE
ID VEGA_MOUSE STANDARD; PRT; 214 AA.
AC Q00731;
DT 01-APR-1993 (Rel. 25, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
DE permeability factor) (VPF).
```

```
GN      VEGF OR VEGFA.
OS      Mus musculus (Mouse).
OC      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC      Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX      NCBI_TaxID=10090;
RN      [1]
RP      SEQUENCE FROM N.A. (ISOFORMS VEGF-1; VEGF-2 AND VEGF-3).
RX      MEDLINE=92274860; PubMed=1592003;
RA      Breier G., Albrecht U., Sterrer S., Risau W.;
RT      "Expression of vascular endothelial growth factor during embryonic
RT      angiogenesis and endothelial cell differentiation.";
RL      Development 114:521-532(1992).
RN      [2]
RP      SEQUENCE FROM N.A. (ISOFORM VEGF-1).
RX      MEDLINE=92355593; PubMed=1644816;
RA      Claffey K.P., Wilkison W.O., Spiegelman B.M.;
RT      "Vascular endothelial growth factor. Regulation by cell
RT      differentiation and activated second messenger pathways.";
RL      J. Biol. Chem. 267:16317-16322(1992).
RN      [3]
RP      SEQUENCE OF 1-3 FROM N.A.
RX      MEDLINE=96216498; PubMed=8632007;
RA      Shima D.T., Kuroki M., Deutsch U., Ng Y., Adamis A.P., D'Amore P.A.;
RT      "The mouse gene for vascular endothelial growth factor. Genomic
RT      structure, definition of the transcriptional unit, and
RT      characterization of transcriptional and post-transcriptional
RT      regulatory sequences.";
RL      J. Biol. Chem. 271:3877-3883(1996).
CC      -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
CC      endothelial cell growth. It induces endothelial cell
CC      proliferation, promotes cell migration, inhibits apoptosis, and
CC      induces permeabilization of blood vessels. It binds to the
CC      VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
CC      heparin (By similarity).
CC      -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
CC      with PLGF (By similarity).
CC      -!- SUBCELLULAR LOCATION: VEGF-1 and VEGF-2 are secreted while VEGF-3
CC      remains cell-surface associated unless released by heparin.
CC      -!- ALTERNATIVE PRODUCTS:
CC      Event=Alternative splicing; Named isoforms=3;
CC      Name=VEGF-3; Synonyms=VEGF188;
CC      IsoId=Q00731-1; Sequence=Displayed;
CC      Name=VEGF-1; Synonyms=VEGF164;
CC      IsoId=Q00731-2; Sequence=VSP_004626, VSP_004627;
CC      Name=VEGF-2; Synonyms=VEGF120;
CC      IsoId=Q00731-3; Sequence=VSP_004628;
CC      -!- TISSUE SPECIFICITY: In developing embryos, expressed mainly in the
CC      choroid plexus, paraventricular neuroepithelium, placenta and
CC      kidney glomeruli. Also found in bronchial epithelium, adrenal
CC      gland and in seminiferous tubules of testis. High expression of
CC      VEGF continues in kidney glomeruli and choroid plexus in adults.
CC      -!- DOMAIN: VEGF-3 contains a basic insert which acts as a cell
CC      retention signal.
CC      -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.
CC      -----
CC      This SWISS-PROT entry is copyright. It is produced through a collaboration
CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC      the European Bioinformatics Institute. There are no restrictions on its
CC      use by non-profit institutions as long as its content is in no way
CC      modified and this statement is not removed. Usage by and for commercial
CC      entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC      or send an email to license@isb-sib.ch).
CC      -----
CC      EMBL; S37052; AAB22252.1; -.
CC      EMBL; S38083; AAB22253.1; -.
CC      EMBL; S38100; AAB22254.1; -.
CC      EMBL; M95200; AAA40547.1; -.
CC      EMBL; U41383; -; NOT_ANNOTATED_CDS.
CC      PIR; A44881; A44881.
CC      PIR; B44881; B44881.
CC      HSSP; P15692; 2VPF.
CC      MGD; MGI:103178; Vegfa.
CC      InterPro; IPR000072; PD_growth_factor.
```



DR Pfam; PF00341; PDGF; 1.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS00278; PDGF\_2; 1.  
KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;  
KW Heparin-binding; Alternative splicing; Multigene family.  
FT SIGNAL 1 26  
FT CHAIN 27 214 VASCULAR ENDOTHELIAL GROWTH FACTOR A.  
FT DISULFID 51 93 BY SIMILARITY.  
FT DISULFID 82 127 BY SIMILARITY.  
FT DISULFID 86 129 BY SIMILARITY.  
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 100 100 N-LINKED (GLCNAC. . .) (PROBABLE).  
FT VARSPLIC 140 140 K -> N (in isoform VEGF-1).  
FT VARSPLIC 141 164 /FTID=VSP 004626.  
FT VARSPLIC 141 208 Missing (in isoform VEGF-1).  
FT VARSPLIC 141 208 /FTID=VSP 004627.  
FT VARSPLIC 141 208 Missing (in isoform VEGF-2).  
FT CONFLICT 117 118 /FTID=VSP 004628.  
FT SEQUENCE 214 AA; 25283 MW; B5540B51E4BB6E17 CRC64;  
SQ  
Query Match 37.9%; Score 320.5; DB 1; Length 214;  
Best Local Similarity 48.1%; Pred. No. 4.1e-26;  
Matches 62; Conservative 20; Mismatches 46; Indels 1; Gaps 1;  
QY 21 SQGALSAGNNSTEMEVVFNWGRSYCRPMKLVYIADEHPNEVSHIFSPSCVLLSRCS 80  
Db 24 SQAAPTTEGQKSHQVYKFMVDVYQSYCRPIETLVDFQYDPDEYIFKPCVPLMRCA 83  
QY 81 GCCGDEGLHCVALKTANITMOLKIPNDRPHSYVEMTFSQDVLCECRPILETTKAERRK 140  
Db 84 GCCNDEALECVPTSESNITMQIMRIKPHQSQH-IGEMSFLQHSRCECRPKKDRTPKPKS 142  
QY 141 TKGKRKQSK 149  
Db 143 VRGKGQSK 151  
RESULT 7  
VEGA RAT STANDARD; PRT; 214 AA.  
AC PI6612; Q9JXK7; Q9QXG6; Q9QXG7;  
DT 01-AUG-1990 (Rel. 15, Created)  
DT 28-FEB-2003 (Rel. 41, Last sequence update)  
DT 15-MAR-2004 (Rel. 43, Last annotation update)  
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular  
DE permeability factor) (VPF).  
GN VEGF OR VEGFA.  
OS Rattus norvegicus (Rat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
OX NCBI\_TaxID=10116;  
RN [1]  
RP SEQUENCE FROM N.A. (ISOFORM VEGF-A164), AND SEQUENCE OF 27-190.  
RX MEDLINE=90207249; PubMed=2320579;  
RA Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,  
RA Palisi T.M., Hope D.A., Thomas K.A.;  
RT "Amino acid and cDNA sequences of a vascular endothelial cell mitogen  
RT that is homologous to platelet-derived growth factor.";  
RL Proc. Natl. Acad. Sci. U.S.A. 87:2628-2633 (1990).  
RN [2]  
RP SEQUENCE FROM N.A. (ISOFORMS VEGF-A188; VEGF-A164; VEGF-A144 AND  
RP VEGF-A120).  
RX MEDLINE=21092309; PubMed=11163598;  
RA Ishii H., Oota I., Takuma T., Inomata K.;  
RT "Developmental expression of vascular endothelial growth factor in the  
RT masseter muscle of rats.";  
RL Arch. Oral Biol. 46:77-82 (2001).  
RN [3]  
RP SEQUENCE OF 27-40.

RC TISSUE=Glial tumor;  
RX MEDLINE=95221439; PubMed=7706320;  
RA DiSalvo J., Bayne M.L., Conn G., Kwok P.W., Trivedi P.G.,  
RA Soderman D.D., Palisi T.M., Sullivan K.A., Thomas K.A.;  
RT "Purification and characterization of a naturally occurring vascular  
RT endothelial growth factor.placenta growth factor heterodimer.";  
RL J. Biol. Chem. 270:7717-7723 (1995).  
CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and  
CC endothelial cell growth. It induces endothelial cell  
CC proliferation, promotes cell migration, inhibits apoptosis, and  
CC induces permeabilization of blood vessels. It binds to the  
CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and  
CC heparin (By similarity).  
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer  
CC with PlGF (By similarity).  
CC -!- SUBCELLULAR LOCATION: VEGF-A120 is acidic and freely secreted.  
CC VEGF-A164 is more basic, has heparin-binding properties and,  
CC although a significant proportion remains cell-associated, most is  
CC freely secreted. VEGF-A188 is very basic; it is cell-associated  
CC after secretion and is bound avidly by heparin and the  
CC extracellular matrix, although it may be released as a soluble  
CC form by heparin, heparinase or plasmin (By similarity).  
CC -!- ALTERNATIVE PRODUCTS:  
CC Event=Alternative splicing; Named isoforms=4;  
CC Comment=Additional isoforms seem to exist;  
CC Name=VEGF-A188;  
CC IsoId=PI6612-1; Sequence=Displayed;  
CC Name=VEGF-A164;  
CC IsoId=PI6612-2; Sequence=VSP\_004629, VSP\_004630;  
CC Name=VEGF-A144;  
CC IsoId=PI6612-3; Sequence=VSP\_004632;  
CC Name=VEGF-A120;  
CC IsoId=PI6612-4; Sequence=VSP\_004631;  
CC -!- TISSUE SPECIFICITY: Expressed in the pituitary, in brain, in  
CC particularly in supraoptic and paraventricular nuclei and the  
CC choroid plexus. Also found abundantly in the corpus luteum of the  
CC ovary and in kidney glomeruli.  
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.  
CC -----  
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CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
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CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
CC -----  
CC EMBL; M32167; AAA41211.1; -.  
CC EMBL; AF215725; AAF19211.1; -.  
CC EMBL; AF215726; AAF19212.1; -.  
CC EMBL; AF222779; AAF25958.1; -.  
CC HSSP; P15692; 1VPP.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS00278; PDGF\_2; 1.  
KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;  
KW Heparin-binding; Alternative splicing; Multigene family.  
FT SIGNAL 1 26 VASCULAR ENDOTHELIAL GROWTH FACTOR A.  
FT CHAIN 27 214 BY SIMILARITY.  
FT DISULFID 51 93 BY SIMILARITY.  
FT DISULFID 82 127 BY SIMILARITY.  
FT DISULFID 86 129 BY SIMILARITY.  
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 100 100 N-LINKED (GLCNAC. . .).  
FT VARSPLIC 140 140 K -> N (in isoform VEGF-A164).  
FT VARSPLIC 141 164 /FTID=VSP\_004629.  
FT VARSPLIC 141 164 Missing (in isoform VEGF-A164).  
FT VARSPLIC 141 208 /FTID=VSP\_004630.  
FT VARSPLIC 141 208 Missing (in isoform VEGF-A120).





RC TISSUE=Retina;  
 RA MEDLINE=99165303; PubMed=10067980;  
 RX Jingjing L., Xue Y., Agarwal N., Roque R.S.;  
 RT "Human Muller cells express VEGF183, a novel spliced variant of  
 RT vascular endothelial growth factor.";  
 RN Invest. Ophthalmol. Vis. Sci. 40:752-759(1999).  
 RP [17]  
 RP PRELIMINARY SEQUENCE OF 27-36; 43-50 AND 59-81.  
 RX MEDLINE=90062112; PubMed=2584205;  
 RA Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,  
 RA Siegel N., Haymore B.L., Leimgruber R., Feder J.;  
 RT "Human vascular permeability factor. Isolation from U937 cells.";  
 RL J. Biol. Chem. 264:20017-20024(1989).  
 RN [18]  
 RP SEQUENCE OF 27-41.  
 RX MEDLINE=93145946; PubMed=7678805;  
 RA Fiebach B.L., Jaeger B., Schoellmann C., Weindel K., Wiltling J.,  
 RA Kochs G., Marne D., Hug H., Weich H.A.;  
 RT "Synthesis and assembly of functionally active human vascular  
 RT endothelial growth factor homodimers in insect cells.";  
 RL Eur. J. Biochem. 211:19-26(1993).  
 RN [19]  
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.  
 RX MEDLINE=97352774; PubMed=9207067;  
 RA Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,  
 RA de Vos A.M.;  
 RT "Vascular endothelial growth factor: crystal structure and functional  
 RT mapping of the kinase domain receptor binding site.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).  
 RN [20]  
 RP X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.  
 RX MEDLINE=98035455; PubMed=9351807;  
 RA Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;  
 RT "The crystal structure of vascular endothelial growth factor (VEGF)  
 RT refined to 1.93-A resolution: multiple copy flexibility and receptor  
 RT binding.";  
 RL Structure 5:1325-1338(1997).  
 RN [21]  
 RP X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.  
 RX MEDLINE=99119204; PubMed=9922142;  
 RA Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,  
 RA Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;  
 RT "Crystal structure of the complex between VEGF and a receptor-blocking  
 RT peptide.";  
 RL Biochemistry 37:17765-17772(1998).  
 RN [22]  
 RP STRUCTURE BY NMR OF 34-135.  
 RX MEDLINE=97477915; PubMed=9336848;  
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,  
 RA Starovasnik M.A.;  
 RT "1H, 13C, and 15N backbone assignment and secondary structure of the  
 RT receptor-binding domain of vascular endothelial growth factor.";  
 RL Protein Sci. 6:2250-2260(1997).  
 RN [23]  
 RP STRUCTURE BY NMR OF 137-215.  
 RX MEDLINE=98298440; PubMed=9634701;  
 RA Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,  
 RA Starovasnik M.A.;  
 RT "Solution structure of the heparin-binding domain of vascular  
 RT endothelial growth factor.";  
 RL Structure 6:637-648(1998).  
 RN [24]  
 RP FUNCTION.  
 RX MEDLINE=21320570; PubMed=11427521;  
 RA Murphy J.F., Fitzgerald D.J.;  
 RT "Vascular endothelial growth factor induces cyclooxygenase-dependent  
 RT proliferation of endothelial cells via the VEGF-2 receptor.";  
 RL FASEB J. 15:1667-1669(2001).  
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and  
 CC endothelial cell growth. It induces endothelial cell  
 CC proliferation, promotes cell migration, inhibits apoptosis, and  
 CC induces permeabilization of blood vessels. It binds to the  
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and

CC heparin. Neuropilin-1 binds isoforms VEGF-165 and VEGF-145.  
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer  
 CC with PlGF (By similarity).  
 CC -!- SUBCELLULAR LOCATION: VEGF121 is acidic and freely secreted.  
 CC VEGF165 is more basic, has heparin-binding properties and,  
 CC although a significant proportion remains cell-associated, most is  
 CC  
 Query Match 37.2%; Score 315; DB 1; Length 232;  
 Best Local Similarity 47.7%; Pred. No. 1.7e-25;  
 Matches 62; Conservative 21; Mismatches 45; Indels 2; Gaps 2;  
 QY 21 SQGA-LSAGNNSTEMEVVFNVEVWGRSYCRPMKLVYIADEHPNEVSHIFSPCVLLSRC 79  
 Db 24 SQAAPMAEGGGQNHHEVVKFMDVYQSYCHPIETLVDIFQEYDEIEYIFKPSVPLMRC 83  
 QY 80 SGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTKAERR 139  
 Db 84 GGCCNDEGLECVPTESNITMQIMRIKPHQGGH-IGEMSFLOHNKCECRPKKDRARQKK 142  
 QY 140 KTKGKRKQSK 149  
 Db 143 SVRGKGKQK 152  
 RESULT 9  
 VEGA\_PIG STANDARD; PRT; 190 AA.  
 ID VEGA\_PIG STANDARD; PRT; 190 AA.  
 AC P49151; Q9GL52;  
 DT 01-FEB-1996 (Rel. 33, Created)  
 DT 01-FEB-1996 (Rel. 33, Last sequence update)  
 DT 10-OCT-2003 (Rel. 42, Last annotation update)  
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular  
 DE permeability factor) (VPF).  
 GN VEGF OR VEGFA.  
 OS Sus scrofa (Pig).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.  
 OX NCBI\_TaxID=9823;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Heart;  
 RX MEDLINE=95143284; PubMed=7841203;  
 RA Sharma H.S., Tang Z.H., Gho B.C.H., Verdouw P.D.;  
 RT "Nucleotide sequence and expression of the porcine vascular  
 RT endothelial growth factor.";  
 RL Biochim. Biophys. Acta 1260:235-238(1995).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RA Lee T., Canty J.M.;  
 RT "PCR cloning of porcine cardiac vascular endothelial growth factor  
 RT gene.";  
 RL Submitted (NOV-2000) to the EMBL/GenBank/DBJ databases.  
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and  
 CC endothelial cell growth. It induces endothelial cell  
 CC proliferation, promotes cell migration, inhibits apoptosis, and  
 CC induces permeabilization of blood vessels. It binds to the  
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and  
 CC heparin (By similarity).  
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer  
 CC with PlGF (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or  
 CC to the extracellular matrix unless released by heparin (By  
 CC similarity).  
 CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.  
 CC  
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 CC -----

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DR EMBL; X81380; CAA57143.1; -.
DR EMBL; AF318502; AAG33064.1; -.
DR PIR; S52130; S52130.
DR HSSP; P15692; 1VGH.
DR InterPro; IPR002400; GF_cysknot.
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
KW Heparin-binding; Multigene family.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
FT DISULFID 51 93 BY SIMILARITY.
FT DISULFID 82 127 BY SIMILARITY.
FT DISULFID 86 129 BY SIMILARITY.
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
FT CARBOHYD 100 100 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CONFLICT 102 102 T -> A (IN REF. 2).
SQ SEQUENCE 190 AA; 22368 MW; 04D40B8D7913047F CRC64;

Query Match 35.0%; Score 296.5; DB 1; Length 190;
Best Local Similarity 48.4%; Pred. No. 1.1e-23;
Matches 62; Conservative 17; Mismatches 40; Indels 9; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVPEVNEVWGRSYCRPMKLVYIADEHPNEVSHIFSPSCVLLSRCS 80
Db 24 SQAAPMAEGDKPHEVVKEMDVYQSYCRPIETLVDIFQEPDEIEYIFKPSVPLMRCG 83

QY 81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHYSYVMTFSQDVLCECRPILETK----- 135
Db 84 GCCNDEGLECVPTTEFNITMQIMRIKPHQGH-IGEMSFLOHKNKCECRPKKDRARQENPC 142

QY 136 ---AERRK 140
Db 143 GPCSERRK 150

RESULT 10
VEGA_HORSE STANDARD; PRT; 190 AA.
AC Q9GKR0;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
GN VEGF OR VEGFA.
OS Equus caballus (Horse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX NCBI_TaxID=9796;
RN [1]
RP SEQUENCE FROM N.A.
RA Miura N., Misumi K., Kawahara K., Nakashima M., Fukumitsu S., Kawabata H., Uto N., Oka T., Maruyama I., Sakamoto H.; "Cloning of cDNA and high-level expression of equine vascular endothelial growth factor (VEGF).";
RT Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial cell growth. Induces endothelial proliferation and vascular permeability (By similarity).
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PlGF (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.
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```

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DR EMBL; AB053350; BAB20890.1; -.
DR HSSP; P15692; 1VGH.
DR InterPro; IPR002400; GF_cysknot.
DR InterPro; IPR000072; PD_growth_factor.
DR Pfam; PF00341; PDGF; 1.
DR PRINTS; PR00438; GFCYSKNOT.
DR ProDom; PD001629; PD_growth_factor; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS0278; PDGF_2; 1.
KW Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
KW Multigene family.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
FT DISULFID 51 93 BY SIMILARITY.
FT DISULFID 82 127 BY SIMILARITY.
FT DISULFID 86 129 BY SIMILARITY.
FT DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
FT CARBOHYD 100 100 N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ SEQUENCE 190 AA; 22312 MW; 87E9E1614395F87 CRC64;

Query Match 34.8%; Score 294.5; DB 1; Length 190;
Best Local Similarity 48.4%; Pred. No. 1.8e-23;
Matches 62; Conservative 15; Mismatches 42; Indels 9; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVPEVNEVWGRSYCRPMKLVYIADEHPNEVSHIFSPSCVLLSRCS 80
Db 24 SQAAPMAEGEHKTHEVVKEMDVYQSYCRPIETLVDIFQEPDEIEYIFKPSVPLMRCG 83

QY 81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHYSYVMTFSQDVLCECRPILETK----- 135
Db 84 GCCNDEGLECVPTAEFNITMQIMRIKPHQSH-IGEMSFLOHKNKCECRPKKDKARQENPC 142

QY 136 ---AERRK 140
Db 143 GPCSERRK 150

RESULT 11
VEGA_CHICK STANDARD; PRT; 216 AA.
AC P52582; Q91420;
DT 01-OCT-1996 (Rel. 34, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).
GN VEGF OR VEGFA.
OS Gallus gallus (Chicken), and
OS Coturnix coturnix japonica (Japanese quail).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
OX NCBI_TaxID=9031, 93934;
RN [1]
RP SEQUENCE FROM N.A.
RC SPECIES=Chicken; TISSUE=Heart;
RA Takahashi T.;
RT "Chick embryonic ventricular myocytes VEGF.";
RL Submitted (FEB-1998) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A. (ISOFORMS VEGF-190; VEGF-166 AND VEGF-146).
RC SPECIES=C.c.japonica; TISSUE=Embryo;
RX MEDLINE=96005007; PubMed=7556923;
-----
```



RA Flamme I., von Reutern M., Drexler H.C., Syed-Ali S., Risau W.;  
 RT "Overexpression of vascular endothelial growth factor in the avian  
 RT embryo induces hypervascularization and increased vascular  
 RT permeability without alterations of embryonic pattern formation.";  
 RL Dev. Biol. 171:399-414(1995).  
 RN [3]  
 RP SEQUENCE OF 60-187 FROM N.A. (ISOFORMS VEGF-190 AND VEGF-166).  
 RC SPECIES=C.c.japonica;  
 RX MEDLINE=95301109; PubMed=7781909;  
 RA Flamme I., Breier G., Risau W.;  
 RT "Vascular endothelial growth factor (VEGF) and VEGF receptor 2  
 RT (flk-1) are expressed during vasculogenesis and vascular  
 RT differentiation in the quail embryo.";  
 RL Dev. Biol. 169:699-712(1995).  
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and  
 CC endothelial cell growth. It induces endothelial cell  
 CC proliferation, promotes cell migration, inhibits apoptosis, and  
 CC induces permeabilization of blood vessels. It binds to the  
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and  
 CC heparin (By similarity).  
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer  
 CC with PLGF (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=3;  
 CC Comment=Additional isoforms seem to exist;  
 CC Name=VEGF-190;  
 CC IsoId=P52582-1; Sequence=Displayed;  
 CC Name=VEGF-166;  
 CC IsoId=P52582-2; Sequence=VSP\_004633, VSP\_004634;  
 CC Note=Has been shown to exist only in quail so far;  
 CC Name=VEGF-146;  
 CC IsoId=P52582-3; Sequence=VSP\_004635, VSP\_004636;  
 CC Note=Has been shown to exist only in quail so far;  
 CC -!- TISSUE SPECIFICITY: Abundantly and equally expressed in heart and  
 CC liver. In kidney glomeruli, brain and yolk sac, VEGF-166 is 5- to  
 CC 10-times more abundant than VEGF-190.  
 CC -!- DEVELOPMENTAL STAGE: VEGF-166 is expressed early at day 1 and is  
 CC upgraded during gastrulation. Expression of VEGF-190 is detectable  
 CC only from day 2.  
 CC -!- DOMAIN: VEGF-190 contains a basic insert which acts as a cell  
 CC retention signal.  
 CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.  
 CC -----  
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 CC -----  
 DR EMBL; AB011078; BAA24925.1; -.  
 DR EMBL; S79680; AAB35371.1; -.  
 DR HSSP; P15692; 1VGH.  
 DR InterPro; IPR000072; PD\_growth\_factor.  
 DR Pfam; PF00341; PDGF; 1.  
 DR ProDom; PD001629; PD\_growth\_factor; 1.  
 DR SMART; SM00141; PDGF; 1.  
 DR PROSITE; PS00249; PDGF\_1; 1.  
 DR PROSITE; PS00278; PDGF\_2; 1.  
 KW Mitogen, Angiogenesis; Growth factor; Glycoprotein; Signal;  
 KW Heparin-binding; Alternative splicing; Multigene family.  
 FT SIGNAL 1 26  
 FT CHAIN 27 216  
 FT DISULFID 52 94  
 FT DISULFID 83 128  
 FT DISULFID 87 130  
 FT DISULFID 77 77  
 FT DISULFID 86 86  
 FT CARBOHYD 101 101  
 FT VARSPLIC 142 142  
 FT /FTid=VSP\_004633.  
 FT Missing (in isoform VEGF-166).  
 FT VARSPLIC 143 166

FT VARSPLIC 166 166 /FTid=VSP\_004634.  
 FT F -> L (in isoform VEGF-146).  
 FT /FTid=VSP\_004635.  
 FT VARSPLIC 167 210 Missing (in isoform VEGF-146).  
 FT /FTid=VSP\_004636.  
 SQ SEQUENCE 216 AA; 25203 MW; 82E569C2F6FC6DA7 CRC64;  
 Query Match 34.5%; Score 291.5; DB 1; Length 216;  
 Best local Similarity 42.3%; Pred. No. 4.3e-23;  
 Matches 60; Conservative 29; Mismatches 46; Indels 7; Gaps 3;  
 QY 21 SQGALSAGNNSTE-MEVVPFNEVGRSYCRPMKLVYIADEHPNEVSHIFSPCVLLSRC 79  
 Db 24 SKAAPALGDGERKPNKVEIKFLEVYERSFCRTIETLVDIFQEYDPDEVEYIFRPSVPLMRC 83  
 QY 80 SGCCGDEGLHCVALKTANITMQILKIPNRPDPSHYVEMTFSQDVLCCECRPILET-----T 134  
 Db 84 AGCCGDEGLECPVDVYVNTMEIARIKPHQSQH-IAHMSFLOHSHKDCRPPKDKVKNQEK 142  
 QY 135 KAERRKTKGKRKQSKTPQTEEP 156  
 Db 143 KSKRGKGKGKRRKRRKGRYKPP 164  
 RESULT 12  
 VEGA\_BOVIN  
 ID VEGA\_BOVIN STANDARD; PRT; 190 AA.  
 AC P15691;  
 DT 01-APR-1990 (Rel. 14, Created)  
 DT 01-APR-1990 (Rel. 14, Last sequence update)  
 DT 10-OCT-2003 (Rel. 42, Last annotation update)  
 DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular  
 DE permeability factor) (VPF).  
 GN VEGF OR VEGFA.  
 OS Bos taurus (Bovine).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
 OC Bovidae; Bovinae; Bos.  
 OX NCBI\_TaxID=9913;  
 RN [1]  
 RP SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.  
 RX MEDLINE=90069608; PubMed=2479986;  
 RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;  
 RT "Vascular endothelial growth factor is a secreted angiogenic  
 RT mitogen.";  
 RL Science 246:1306-1309(1989).  
 RN [2]  
 RP SEQUENCE OF 27-190 FROM N.A. (ISOFORMS ALPHA AND BETA).  
 RX MEDLINE=90121225; PubMed=2610687;  
 RA Tischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,  
 RA Lau K., Crisp T., Fiddes J.C., Abraham J.A.;  
 RT "Vascular endothelial growth factor: a new member of the platelet-  
 RT derived growth factor gene family.";  
 RL Biochem. Biophys. Res. Commun. 165:1198-1206(1989).  
 RN [3]  
 RP SEQUENCE OF 27-31.  
 RX MEDLINE=89286596; PubMed=2735925;  
 RA Ferrara N., Henzel W.J.;  
 RT "Pituitary follicular cells secrete a novel heparin-binding growth  
 RT factor specific for vascular endothelial cells.";  
 RL Biochem. Biophys. Res. Commun. 161:851-858(1989).  
 CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and  
 CC endothelial cell growth. It induces endothelial cell  
 CC proliferation, promotes cell migration, inhibits apoptosis, and  
 CC induces permeabilization of blood vessels. It binds to the  
 CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and  
 CC heparin (By similarity).  
 CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer  
 CC with PLGF (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or  
 CC to the extracellular matrix unless released by heparin (By  
 CC similarity).  
 CC -!- ALTERNATIVE PRODUCTS:



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CC Event-Alternative splicing; Named isoforms=2;
CC Name=Alpha;
CC IsoId=P15691-1; Sequence=Displayed;
CC Name=Beta;
CC IsoId=P15691-2; Sequence=VSP 004613, VSP 004614;
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; M32976; AAA30502.1; -
CC EMBL; M31836; AAA30804.1; -
CC EMBL; M33750; AAA30805.1; -
CC PIR; A33787; A33787.
CC PIR; B40080; B40080.
CC HSSP; P15692; IVGH.
CC InterPro; IPR002400; GF_cysknot.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC PRINTS; PR00438; GFCYSKNOT.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS50278; PDGF_2; 1.
CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
CC Heparin-binding; Alternative splicing; Multigene family.
CC SIGNAL 1 26
CC CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
CC DISULFID 51 93 BY SIMILARITY.
CC DISULFID 82 127 BY SIMILARITY.
CC DISULFID 86 129 BY SIMILARITY.
CC DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
CC DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
CC CARBOHYD 100 100 N-LINKED (GLCNAC. .) (POTENTIAL).
CC VARSPLIC 139 183 Missing (in isoform Beta).
CC VARSPLIC 184 184 /FTID=VSP 004613.
CC VARSPLIC 184 184 R -> K (in isoform Beta).
CC /FTID=VSP 004614.
CC SEQUENCE 190 AA; 22310 MW; EDBF903E46E24789 CRC64;
CC -----
CC Query Match 33.5%; Score 283.5; DB 1; Length 190;
CC Best Local Similarity 46.9%; Pred. No. 2.5e-22;
CC Matches 60; Conservative 16; Mismatches 43; Indels 9; Gaps 2;
CC -----
QY 21 SQGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRCS 80
Db 24 SQAAPMAEGGKPEHVWKFMDVYQSRFCRIETLVDFQYDPDEIERFIFKPSCVPLMRCG 83
QY 81 GCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFSQDVLCECRPILETTK----- 135
Db 84 GCCNDESLECVPTSEFNITMQIMRIKPHQSQH-IGEMSFLOHNCCECRPKDKARQENPC 142
QY 136 ---AERRK 140
Db 143 GPCSERRK 150
RESULT 13
VEGA_MESAU
ID_VEGA_MESAU STANDARD; PRT; 190 AA.
AC Q99PS1;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular
DE permeability factor) (VPF).
GN VEGF OR VEGFA.
OS Mesocricetus auratus (Golden hamster).
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OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Decidua, and Embryo;
RX MEDLINE=9311285; PubMed=103822276;
RA Yi X.J., Jiang H.Y., Lee K.K., Tang P.L., Chow P.H.;
RT "Expression of vascular endothelial growth factor (VEGF) and its
RT receptors during embryonic implantation in the golden hamster
RT (Mesocricetus auratus).";
RL Cell Tissue Res. 296:339-349(1999).
CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and
CC endothelial cell growth. It induces endothelial cell
CC proliferation, promotes cell migration, inhibits apoptosis, and
CC induces permeabilization of blood vessels. It binds to the
CC VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and
CC heparin (By similarity).
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer
CC with PlGF (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or
CC to the extracellular matrix unless released by heparin (By
CC similarity).
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; AF063013; AAK00049.1; -
CC HSSP; P15692; IVGH.
CC InterPro; IPR002400; GF_cysknot.
CC InterPro; IPR000072; PD_growth_factor.
CC Pfam; PF00341; PDGF; 1.
CC PRINTS; PR00438; GFCYSKNOT.
CC ProDom; PD001629; PD_growth_factor; 1.
CC SMART; SM00141; PDGF; 1.
CC PROSITE; PS00249; PDGF_1; 1.
CC PROSITE; PS50278; PDGF_2; 1.
CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal;
CC Heparin-binding; Multigene family.
CC SIGNAL 1 26 BY SIMILARITY.
CC CHAIN 27 190 VASCULAR ENDOTHELIAL GROWTH FACTOR A.
CC DISULFID 51 93 BY SIMILARITY.
CC DISULFID 82 127 BY SIMILARITY.
CC DISULFID 86 129 BY SIMILARITY.
CC DISULFID 76 76 INTERCHAIN (BY SIMILARITY).
CC DISULFID 85 85 INTERCHAIN (BY SIMILARITY).
CC CARBOHYD 100 100 N-LINKED (GLCNAC. .) (POTENTIAL).
CC SEQUENCE 190 AA; 22276 MW; F00C5A8EA79A465F CRC64;
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CC Query Match 33.4%; Score 282.5; DB 1; Length 190;
CC Best Local Similarity 46.1%; Pred. No. 3.2e-22;
CC Matches 59; Conservative 16; Mismatches 44; Indels 9; Gaps 2;
CC -----
QY 21 SQGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRCS 80
Db 24 SQAAPTTEGEQKAHGVEFMDVYRRSYCHPIETLVDFQYDPDEIERFIFKPSCVPLMRCG 83
QY 81 GCCGDEGLHCVALKTANITMQILKIPNRPDPSYVEMTFSQDVLCECRPILETTK----- 135
Db 84 GCCSDEALECVPTSEFNITMQIMRVKPHQSQH-IGEMSFLOHNCCECRPKKVRTKPNHC 142
QY 136 ---AERRK 140
Db 143 EPCSERRK 150
```

RESULT 14  
VEGA SHEEP  
ID VEGA SHEEP STANDARD; PRT; 146 AA.  
AC P50412;  
DT 01-OCT-1996 (Rel. 34, Created)  
DT 01-OCT-1996 (Rel. 34, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Vascular endothelial growth factor A precursor (VEGF-A) (Vascular permeability factor) (VPF).  
DE permeability factor) (VPF).  
GN VEGF OR VEGFA.  
OS Ovis aries (Sheep).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae; Caprinae; Ovis.  
OX NCBI\_TaxID=9940;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Kidney;  
RX MEDLINE=97117958; PubMed=8958842;  
RA Redmer D.A., Dai Y., Li J., Charnock-Jones D.S., Smith S.K., Reynolds L.P., Moor R.M.;  
RT "Characterization and expression of vascular endothelial growth factor (VEGF) in the ovine corpus luteum.";  
RT J. Reprod. Fert. 108:157-165(1996).  
RL  
CC -!- FUNCTION: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. It induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis, and induces permeabilization of blood vessels. It binds to the VEGFR1/Flt-1 and VEGFR2/Kdr receptors and to heparan sulfate and heparin (By similarity).  
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PlGF (By similarity).  
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.  
CC  
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CC  
CC EMBL; X89506; CAA61677.1; --  
CC PIR; S57956; S57956.  
CC HSSP; P15692; 1VPP.  
CC InterPro; IPR000072; PD\_growth\_factor.  
CC Pfam; PF00341; PDGF; 1.  
CC PRINTS; PR00438; GFCYSKNOT.  
CC ProDom; PD001629; PD\_growth\_factor; 1.  
CC SMART; SM00141; PDGF; 1.  
CC PROSITE; PS00249; PDGF\_1; 1.  
CC PROSITE; PS0278; PDGF\_2; 1.  
CC Mitogen; Angiogenesis; Growth factor; Glycoprotein; Signal; Heparin-binding; Multigene family.  
KW SIGNAL 1 26  
FT CHAIN 27 146 VASCULAR ENDOTHELIAL GROWTH FACTOR A.  
FT DISULFID 51 93 BY SIMILARITY.  
FT DISULFID 82 127 BY SIMILARITY.  
FT DISULFID 86 129 BY SIMILARITY.  
FT DISULFID 76 129 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 85 85 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 100 100 N-LINKED (GLCNAC...) (POTENTIAL).  
SQ SEQUENCE 146 AA; 17247 MW; 4E792CB557F91760 CRC64;  
Query Match 33.3%; Score 282; DB 1; Length 146;  
Best Local Similarity 43.9%; Pred. No. 2.7e-22;  
Matches 58; Conservative 20; Mismatches 44; Indels 10; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVPEVNEVWGRSYCRPMKLVYIADEHPNEVSHIFSPCVLLSRCS 80  
Db 24 SQAAPMAEGGQKPEHVMKMDVYQSFRCPIETLVDFQEPDEIEFIFKPSVPLMRCG 83

QY 81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSDVLCRPILETTKAERRK 140  
Db 84 GCCNDESLECVPTTEFNITMQIMRIKPHSQH-IGEMSFLOHKNKCECRP-----KK 133  
QY 141 TKGKRKQSKTPQ 152  
Db 134 DKARQEKCDKPR 145  
RESULT 15  
VEGA CAVPO  
ID VEGA CAVPO STANDARD; PRT; 164 AA.  
AC P26617;  
DT 01-AUG-1992 (Rel. 23, Created)  
DT 01-AUG-1992 (Rel. 23, Last sequence update)  
DT 10-OCT-2003 (Rel. 42, Last annotation update)  
DE Vascular endothelial growth factor A (VEGF-A) (Vascular permeability factor) (VPF).  
DE factor) (VPF).  
GN VEGF OR VEGFA.  
OS Cavia porcellus (Guinea pig).  
OC Mammalia; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.  
OX NCBI\_TaxID=10141;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Bile duct;  
RA Berse B.;  
RL Submitted (JAN-1992) to the EMBL/GenBank/DBJ databases.  
CC -!- FUNCTION: Growth factor active in angiogenesis, and endothelial cell growth. Induces endothelial proliferation and vascular permeability (By similarity).  
CC -!- SUBUNIT: Homodimer; disulfide-linked. Also found as heterodimer with PlGF (By similarity).  
CC -!- SUBCELLULAR LOCATION: Secreted but remains associated to cells or to the extracellular matrix unless released by heparin (By similarity).  
CC -!- SIMILARITY: Belongs to the PDGF/VEGF growth factor family.  
CC  
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CC  
CC EMBL; M84230; AAA37057.1; --  
CC HSSP; P15692; 1VGH.  
CC InterPro; IPR002400; GF\_cysknot.  
CC InterPro; IPR000072; PD\_growth\_factor.  
CC Pfam; PF00341; PDGF; 1.  
CC PRINTS; PR00438; GFCYSKNOT.  
CC ProDom; PD001629; PD\_growth\_factor; 1.  
CC SMART; SM00141; PDGF; 1.  
CC PROSITE; PS00249; PDGF\_1; 1.  
CC PROSITE; PS0278; PDGF\_2; 1.  
CC Mitogen; Angiogenesis; Growth factor; Glycoprotein.  
KW DISULFID 25 67 BY SIMILARITY.  
FT DISULFID 56 101 BY SIMILARITY.  
FT DISULFID 60 103 BY SIMILARITY.  
FT DISULFID 50 50 INTERCHAIN (BY SIMILARITY).  
FT DISULFID 59 59 INTERCHAIN (BY SIMILARITY).  
FT CARBOHYD 74 74 N-LINKED (GLCNAC...) (POTENTIAL).  
SQ SEQUENCE 164 AA; 19330 MW; 9EB86A81A9D5DCA4 CRC64;

Query Match 33.2%; Score 280.5; DB 1; Length 164;  
Best Local Similarity 50.0%; Pred. No. 4.4e-22;  
Matches 57; Conservative 15; Mismatches 33; Indels 9; Gaps 2;

QY 35 EVVPFNEVWGRSYCRPMKLVYIADEHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALK 94  
Db 12 BEVKFMDVYKRSYCRPIEMLVDFIQEYPDEIEYIFKPSVPLMRCCGNCNDESLECVPT 71

Qy 95 TANITMQILKIPPNRDPHSYVENTFSQDVLCECRPILETTK-----AERRK 140  
| | | | | : | | : | | | | | :  
Db 72 EFNITMQIMRIKPHQGH-IGENSFLQHSKCECRPXKKEKARQENPCGPGCSERRK 124

Search completed: September 13, 2004, 09:51:24  
Job time : 24 secs

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OM protein - protein search, using sw model

Run on: September 13, 2004, 09:44:09 ; Search time 116 Seconds  
(without alignments)  
429.758 Million cell updates/sec

Title: US-10-071-370A-4  
Perfect score: 846  
Sequence: 1 MLAMKLFTCLQVLAGLAVH.....RKTGKRKQSKTPQTEEPHL 158

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1017041 seqs, 315518202 residues

Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000  
Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : SPTREMBL 25:  
1: sp\_archaea:  
2: sp\_bacteria:  
3: sp\_fungi:  
4: sp\_human:  
5: sp\_invertebrate:  
6: sp\_mammal:  
7: sp\_mhc:  
8: sp\_organelle:  
9: sp\_phage:  
10: sp\_plant:  
11: sp\_rodent:  
12: sp\_virus:  
13: sp\_vertebrate:  
14: sp\_unclassified:  
15: sp\_rvirus:  
16: sp\_bacteriap:  
17: sp\_archaeap:

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Match | Length | DB ID     | Description        |
|------------|-------|---------|--------|-----------|--------------------|
| 1          | 322.5 | 38.1    | 108    | 6 Q8HY75  | Q8hy75 ovis aries  |
| 2          | 300   | 35.5    | 189    | 6 Q95LQ4  | Q95lq4 felis silve |
| 3          | 299.5 | 35.4    | 190    | 11 Q91ZE1 | Q91zel rattus norv |
| 4          | 295.5 | 34.9    | 184    | 6 Q8HY70  | Q8hy70 mustela vis |
| 5          | 295   | 34.9    | 191    | 4 Q96KJ0  | Q96kj0 homo sapien |
| 6          | 295   | 34.9    | 191    | 4 Q96L82  | Q96l82 homo sapien |
| 7          | 295   | 34.9    | 191    | 6 Q95NE5  | Q95ne5 macaca fasc |
| 8          | 294.5 | 34.8    | 190    | 11 Q9QX39 | Q9qx39 spalax leuc |
| 9          | 290   | 34.3    | 126    | 6 Q9BDP7  | Q9bdp7 macaca mula |
| 10         | 288.5 | 34.1    | 124    | 6 Q8SPZ9  | Q8spz9 sus scrofa  |
| 11         | 288.5 | 34.1    | 128    | 6 Q8SPL5  | Q8spl5 equus cabal |
| 12         | 287.5 | 34.0    | 127    | 6 Q8WMQ4  | Q8wmq4 sus scrofa  |
| 13         | 280.5 | 33.2    | 190    | 6 Q77643  | O77643 ovis aries  |
| 14         | 278   | 32.9    | 120    | 6 Q866G4  | Q866g4 oryctolagus |
| 15         | 276.5 | 32.7    | 144    | 13 Q73822 | O73822 brachydanio |
| 16         | 275   | 32.5    | 118    | 6 Q9MZB1  | Q9mzb1 ovis aries  |

|    |       |      |     |           |                    |
|----|-------|------|-----|-----------|--------------------|
| 17 | 274.5 | 32.4 | 124 | 6 Q9GK00  | Q9gk00 callithrix  |
| 18 | 273.5 | 32.3 | 188 | 13 Q73682 | O73682 brachydanio |
| 19 | 273   | 32.3 | 194 | 13 Q42572 | O42572 xenopus lae |
| 20 | 271   | 32.0 | 148 | 13 Q42571 | O42571 xenopus lae |
| 21 | 266.5 | 31.5 | 142 | 11 Q9ERL6 | Q9erl6 mesocricetu |
| 22 | 254.5 | 30.1 | 146 | 13 Q90X23 | Q90x23 bothrops ja |
| 23 | 254.5 | 30.1 | 146 | 13 Q90X24 | Q90x24 bothrops in |
| 24 | 229   | 27.1 | 141 | 11 Q70123 | O70123 mus musculu |
| 25 | 225.5 | 26.7 | 110 | 11 Q88911 | O88911 rattus norv |
| 26 | 208.5 | 24.6 | 123 | 6 Q9NLS1  | Q9nls1 capreolus c |
| 27 | 207.5 | 24.5 | 75  | 6 O18843  | O18843 oryctolagus |
| 28 | 206   | 24.3 | 132 | 12 Q9YMF3 | Q9ymf3 orf virus.  |
| 29 | 205.5 | 24.3 | 78  | 6 Q9NLS2  | Q9nls2 capreolus c |
| 30 | 200   | 23.6 | 68  | 6 Q97500  | Q97500 oryctolagus |
| 31 | 191.5 | 22.6 | 136 | 12 Q8QGE8 | Q8Qge8 orf virus.  |
| 32 | 188   | 22.2 | 64  | 11 Q8OUA0 | Q8oua0 mus musculu |
| 33 | 180.5 | 21.3 | 152 | 12 Q8B571 | Q8b571 pseudocowpo |
| 34 | 178   | 21.0 | 188 | 4 Q8TEV2  | Q8tev2 homo sapien |
| 35 | 158.5 | 18.7 | 131 | 6 Q8MJ86  | Q8mj86 capreolus c |
| 36 | 153   | 18.1 | 65  | 6 Q8MIN0  | Q8min0 capra hircu |
| 37 | 153   | 18.1 | 326 | 11 Q91ZE4 | Q91ze4 rattus norv |
| 38 | 151.5 | 17.9 | 109 | 6 Q8MIN1  | Q8min1 capra hircu |
| 39 | 144   | 17.0 | 415 | 11 Q91ZE3 | Q91ze3 rattus norv |
| 40 | 144   | 17.0 | 418 | 13 Q57352 | O57352 coturnix co |
| 41 | 140   | 16.5 | 326 | 11 Q91ZH6 | Q91zh6 meriones un |
| 42 | 137   | 16.2 | 252 | 13 Q8QGD7 | Q8qgd7 gallus gall |
| 43 | 134   | 15.8 | 420 | 6 Q9XS50  | Q9xs50 bos taurus  |
| 44 | 124.5 | 14.7 | 314 | 5 Q9BLX1  | Q9blx1 drosophila  |
| 45 | 124.5 | 14.7 | 325 | 5 Q9VWP6  | Q9vwp6 drosophila  |

ALIGNMENTS

RESULT 1  
Q8HY75  
ID Q8HY75 PRELIMINARY; PRT; 108 AA.  
AC Q8HY75;  
DT 01-MAR-2003 (TRENBLrel. 23, Created)  
DT 01-MAR-2003 (TRENBLrel. 23, Last sequence update)  
DT 01-OCT-2003 (TRENBLrel. 25, Last annotation update)  
DE Placental growth factor (Fragment).  
OS Ovis aries (Sheep).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;  
OC Bovidae; Caprinae; Ovis.  
OX NCBI\_TaxID=9940;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Placenta;  
RX MEDLINE=21946003; PubMed=11945079;  
RA Regnault T.R.H., Orbus R.J., de Vrijer B., Davidsen M.L., Galan H.L.,  
RA Wilkening R.B., Anthony R.V.;  
RT "Placental expression of VEGF, PlGF and their receptors in a model of  
RT placental insufficiency-intrauterine growth restriction (PI-IUGR).";  
RL Placenta 23:132-144(2002).  
DR EMBL; AY157708; AAN77495.1; -.  
DR GO; GO:0016020; C:membrane; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS50278; PDGF\_2; 1.  
FT NON TER  
SQ SEQUENCE 108 AA; 12634 MW; F2BC426137AC4CFC CRC64;

Query Match 38.1%; Score 322.5; DB 6; Length 108;  
Best Local Similarity 56.4%; Pred. No. 1.3e-29;  
Matches 57; Conservative 18; Mismatches 25; Indels 1; Gaps 1;



Matches 62; Conservative 16; Mismatches 41; Indels 9; Gaps 2;  
QY 21 SQGALSAGNNSTEMEVVFNWGRSYCRPMKLVYIADHPNEVSHIFSPSCVLLSRC 80  
Db 24 SQAAPMAEGEHKPHFVVKFMDVYQSYCRPIETLVDFQYDPEIEYIFKPSVPLMRC 83  
QY 81 GCGCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK----- 135  
Db 84 GGCNDEGLECVPTTEFNITMQIMRIKPHQGH-IGEMSFQHSKCECRPKKDRARQENPC 142  
QY 136 ---AERRK 140  
Db 143 GPCSERK 150

RESULT 5  
Q96KJ0 PRELIMINARY; PRT; 191 AA.  
AC Q96KJ0;  
DT 01-DEC-2001 (TrEMBLrel. 19, Created)  
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Vascular endothelial growth factor 165b.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Kidney;  
RA Sugiono M., Winkler M., Gillatt D., Harper S.J., Bates D.O.;  
RT "A new isoform of vascular endothelial growth factor mRNA is down-  
regulated in renal tumors."  
RL (In) Unknown A. (eds.);  
RL Proceedings of the 7th World Congress on Microcirculation, pp.3-3,  
Sydney, Australia (2001).  
DR EMBL; AF430806; AAL27435.1; -.  
DR GO; GO:0016020; C:membrane; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
DR InterPro; IPR002400; GF\_cysknot.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR PRINTS; PR00438; GFCYSKNOT.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS50278; PDGF\_2; 1.  
SQ SEQUENCE 191 AA; 22258 MW; D25243E540AC79BD CRC64;

Query Match 34.9%; Score 295; DB 4; Length 191;  
Best Local Similarity 47.3%; Pred. No. 4.1e-26;  
Matches 61; Conservative 19; Mismatches 39; Indels 10; Gaps 3;  
QY 21 SQGA-LSAGNNSTEMEVVFNWGRSYCRPMKLVYIADHPNEVSHIFSPSCVLLSRC 79  
Db 24 SQAAPMAEGGGQNHHEVVKFMDVYQSYCRPIETLVDFQYDPEIEYIFKPSVPLMRC 83  
QY 80 SGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK---- 135  
Db 84 GGCNDEGLECVPTTEFNITMQIMRIKPHQGH-IGEMSFQHSKCECRPKKDRARQENP 142  
QY 136 ---AERRK 140  
Db 143 GPCSERK 151  
RESULT 6  
Q96L82 PRELIMINARY; PRT; 191 AA.  
ID Q96L82  
AC Q96L82;  
DT 01-DEC-2001 (TrEMBLrel. 19, Created)  
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)

DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)  
DE Vascular endothelial growth factor isoform VEGF165.  
GN VEGF.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Liu J., Peng X., Yuan J., Qiang B.;  
RT "Cloning of vascular endothelial growth factor (VEGF) cDNA."  
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.  
RN [2]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Heart;  
RA Shan Z.X., Yu X.Y., Lin Q.X., Fu Y.H., Zheng M., Tan H.H., Lin S.G.;  
RT "Cloning and identification of vascular endothelial growth factor  
isoform VEGF165."  
RL Submitted (FEB-2002) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AY047581; AAK95847.1; -.  
DR EMBL; AF485837; AAM03108.1; -.  
DR GO; GO:0016020; C:membrane; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
DR InterPro; IPR002400; GF\_cysknot.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR PRINTS; PR00438; GFCYSKNOT.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS50278; PDGF\_2; 1.  
SQ SEQUENCE 191 AA; 22314 MW; CCE57097DD3779BD CRC64;

Query Match 34.9%; Score 295; DB 4; Length 191;  
Best Local Similarity 47.3%; Pred. No. 4.1e-26;  
Matches 61; Conservative 19; Mismatches 39; Indels 10; Gaps 3;  
QY 21 SQGA-LSAGNNSTEMEVVFNWGRSYCRPMKLVYIADHPNEVSHIFSPSCVLLSRC 79  
Db 24 SQAAPMAEGGGQNHHEVVKFMDVYQSYCRPIETLVDFQYDPEIEYIFKPSVPLMRC 83  
QY 80 SGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK---- 135  
Db 84 GGCNDEGLECVPTTEFNITMQIMRIKPHQGH-IGEMSFQHSKCECRPKKDRARQENP 142  
QY 136 ---AERRK 140  
Db 143 GPCSERK 151

RESULT 7  
Q9SNE5 PRELIMINARY; PRT; 191 AA.  
ID Q9SNE5  
AC Q9SNE5;  
DT 01-DEC-2001 (TrEMBLrel. 19, Created)  
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE SimVEGF165.  
GN SimVEGF165.  
OS Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheciidae;  
OC Cercopitheciinae; Macaca.  
OX NCBI\_TaxID=9541;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=96245208; PubMed=8641836;  
RA Shima D.T., Gougos A., Miller J.W., Tolentino M., Robinson G.,  
RA Adamis A.P., D'Amore P.A.;  
RT "Cloning and mRNA expression of vascular endothelial growth factor in  
ischemic retinas of Macaca fascicularis."  
RL Invest. Ophthalmol. Vis. Sci. 37:1334-1340(1996).  
DR EMBL; S82167; AAB47118.1; -.

DR GO; GO:0016020; C:membrane; IEA.  
 DR GO; GO:0008083; F:growth factor activity; IEA.  
 DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
 DR InterPro; IPR002400; GF\_cysknot.  
 DR InterPro; IPR000072; PD\_growth\_factor.  
 DR Pfam; PF00341; PDGF\_1.  
 DR PRINTS; PR00438; GFCYSKNOT.  
 DR ProDom; PD001629; PD\_growth\_factor; 1.  
 DR PROSITE; PS00249; PDGF\_1; 1.  
 DR PROSITE; PS50278; PDGF\_2; 1.  
 SQ SEQUENCE 191 AA; 22314 MW; CCE57097DD3779BD CRC64;

Query Match 34.9%; Score 295; DB 6; Length 191;  
 Best Local Similarity 47.3%; Pred. No. 4.1e-26;  
 Matches 61; Conservative 19; Mismatches 39; Indels 10; Gaps 3;

QY 21 SQGA-LSAGNNSTEMEVVPEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRC 79  
 Db 24 SQAAPMAEGGGQNHHEVVKFMDVYQSYCHPIETLVDFQYEPDEIEYIFKPSVPLMRC 83  
 QY 80 SGCCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTFSDVLCCECRPIETTK---- 135  
 Db 84 GGCCNDEGLECVPTESNITMQIMRIKPHQGH-IGEMSFLOHKNKCECRPKKDRARQENP 142

QY 136 ----AERRK 140  
 Db 143 CGPCSERK 151

RESULT 8  
 Q9QX39  
 ID Q9QX39 PRELIMINARY; PRT; 190 AA.  
 AC Q9QX39;  
 DT 01-MAY-2000 (TrEMBLrel. 13, Created)  
 DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
 DE Vascular endothelial growth factor.  
 GN VEGF.

OS Spalax leucodon ehrenbergi (Ehrenberg's mole rat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;  
 OC Nannospalax.  
 OX NCBI\_TaxID=30637;  
 RN [1]

SEQUENCE FROM N.A.  
 MEDLINE=99313148; PubMed=10386577;  
 RA Avivi A., Resnick M.B., Nevo E., Joel A., Levy A.P.;  
 RT "Adaptive hypoxic tolerance in the subterranean mole rat Spalax  
 ehrenbergi: the role of vascular endothelial growth factor.";  
 RL FEBS Lett. 452:133-140(1999).  
 DR EMBL; AF186236; AAD56245.1; -.  
 DR HSSP; P49763; 1FZV.

DR GO; GO:0016020; C:membrane; IEA.  
 DR GO; GO:0008083; F:growth factor activity; IEA.  
 DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
 DR InterPro; IPR002400; GF\_cysknot.  
 DR InterPro; IPR000072; PD\_growth\_factor.  
 DR Pfam; PF00341; PDGF; 1.  
 DR PRINTS; PR00438; GFCYSKNOT.  
 DR ProDom; PD001629; PD\_growth\_factor; 1.  
 DR SMART; SM00141; PDGF; 1.  
 DR PROSITE; PS00249; PDGF\_1; 1.  
 DR PROSITE; PS50278; PDGF\_2; 1.  
 SQ SEQUENCE 190 AA; 22488 MW; 2228383BC65F0BFE CRC64;

Query Match 34.8%; Score 294.5; DB 11; Length 190;  
 Best Local Similarity 43.9%; Pred. No. 4.6e-26;  
 Matches 65; Conservative 21; Mismatches 53; Indels 9; Gaps 2;

QY 1 MLAMKLFCTCFLQVLAVHSGALSTEMEVVPEVWGRSYCRPMEKLVYIADE 60  
 Db 4 LLSNMHWTLALLLHAKWSQAAPTAEGEQKPHVVKFMDVFRRSYCHPIETLVDFQE 63

QY 61 HPNEVSHIFSPSCVLLSRCSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTF 120  
 Db 64 YPDEIEYIFKPSVPLMRCGGCCNDEALECVPTESNITMQIMRIKPHQGH-IGEMSF 122  
 QY 121 QDVLCECRPIETTK-----AERRK 140  
 Db 123 QHNRCECRPKKDRTRLENHCEPCSERK 150

RESULT 9  
 Q9BDP7  
 ID Q9BDP7 PRELIMINARY; PRT; 126 AA.  
 AC Q9BDP7;  
 DT 01-JUN-2001 (TrEMBLrel. 17, Created)  
 DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
 DE Vascular endothelial growth factor (Fragment).  
 OS Macaca mulatta (Rhesus macaque).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;  
 OC Cercopithecinae; Macaca.  
 OX NCBI\_TaxID=9544;  
 RN [1]

SEQUENCE FROM N.A.  
 RA Hazzard T.M., Nayak N.R., Jia Y., Stouffer R.L.;  
 RT "Rhesus macaque VEGF mRNA sequence."  
 RL Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF339737; AAK26379.1; -.  
 DR HSSP; P49763; 1FZV.  
 DR GO; GO:0016020; C:membrane; IEA.  
 DR GO; GO:0008083; F:growth factor activity; IEA.  
 DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
 DR InterPro; IPR002400; GF\_cysknot.  
 DR InterPro; IPR000072; PD\_growth\_factor.  
 DR Pfam; PF00341; PDGF; 1.  
 DR PRINTS; PR00438; GFCYSKNOT.  
 DR ProDom; PD001629; PD\_growth\_factor; 1.  
 DR SMART; SM00141; PDGF; 1.  
 DR PROSITE; PS00249; PDGF\_1; 1.  
 DR PROSITE; PS50278; PDGF\_2; 1.  
 FT NON\_TER 1  
 FT NON\_TER 126  
 SQ SEQUENCE 126 AA; 14599 MW; 1175F2386A883BCF CRC64;

Query Match 34.3%; Score 290; DB 6; Length 126;  
 Best Local Similarity 51.8%; Pred. No. 9.5e-26;  
 Matches 57; Conservative 16; Mismatches 35; Indels 2; Gaps 2;

QY 21 SQGA-LSAGNNSTEMEVVPEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRC 79  
 Db 17 SQAAPMAEGGGQNHHEVVKFMDVYQSYCHPIETLVDFQYEPDEIEYIFKPSVPLMRC 76  
 QY 80 SGCCGDEGLHCVALKTANITMQILKIPPNRDPHSHYVEMTFSDVLCCECRP 129  
 Db 77 GGCCNDEGLECVPTESNITMQIMRIKPHQGH-IGEMSFLOHKNKCECRP 125

RESULT 10  
 Q8SPZ9  
 ID Q8SPZ9 PRELIMINARY; PRT; 124 AA.  
 AC Q8SPZ9;  
 DT 01-JUN-2002 (TrEMBLrel. 21, Created)  
 DT 01-JUN-2002 (TrEMBLrel. 21, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
 DE Vascular endothelial growth factor (Fragment).  
 OS Sus scrofa (Pig).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.  
 OX NCBI\_TaxID=9823;  
 RN [1]

SEQUENCE FROM N.A.  
 TISSUE=Myocardium;  
 RA Yuan H., Li J.;



RT "The expression of VEGF in porcine collateral-dependent myocardial by  
RT exercise training."  
RL Submitted (DEC-2001) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AF461807; AAL85286.1; -  
DR GO; GO:0016020; C:membrane; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
DR InterPro; IPR002400; GF\_cysknot.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR PRINTS; PR00438; GFCYSKNOT.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS50278; PDGF\_2; 1.  
FT NON\_TER 124 124  
SQ SEQUENCE 124 AA; 14552 MW; 2E1C1A009E67C9C9 CRC64;

Query Match 34.1%; Score 288.5; DB 6; Length 124;  
Best Local Similarity 50.9%; Pred. No. 1.4e-25;  
Matches 58; Conservative 16; Mismatches 31; Indels 9; Gaps 2;  
  
QY 35 EVVPFNEVWGRSYCRPMEKLVYIADHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALK 94  
Db 10 EVVKEMDVYQSYCRPIETLVDFQYEPDEIEYIFKPSCVPLMRCCGCCNDEGLECVPT 69  
QY 95 TANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK-----AERRK 140  
Db 70 EFNITMQIMRIKPHQGH-IGEMSFLOHNSKCECRPKKDRARQENPCGCSERRK 122

RESULT 11  
Q8SPL5 PRELIMINARY; PRT; 128 AA.  
AC Q8SPL5;  
DT 01-JUN-2002 (TrEMBLrel. 21, Created)  
DT 01-JUN-2002 (TrEMBLrel. 21, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Vascular endothelial growth factor (Fragment).  
GN VEGF.  
OS Equus caballus (Horse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.  
OX NCBI\_TaxID=9796;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Endometrium;  
RA Welter H., Bollwein H., Einspanier R.;  
RT "Expression of horse endometrium."  
RL Submitted (MAR-2002) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AJ439887; CAD29178.1; -  
DR GO; GO:0016020; C:membrane; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
DR InterPro; IPR002400; GF\_cysknot.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR PRINTS; PR00438; GFCYSKNOT.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS50278; PDGF\_2; 1.  
FT NON\_TER 128 128  
SQ SEQUENCE 128 AA; 14943 MW; 64EFA5DB550FC638 CRC64;

Query Match 34.1%; Score 288.5; DB 6; Length 128;  
Best Local Similarity 50.9%; Pred. No. 1.4e-25;  
Matches 58; Conservative 15; Mismatches 32; Indels 9; Gaps 2;  
  
QY 35 EVVPFNEVWGRSYCRPMEKLVYIADHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALK 94  
Db 1 EVVKEMDVYQSYCRPIETLVDFQYEPDEIEYIFKPSCVPLMRCCGCCNDEGLECVPT 60

QY 95 TANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK-----AERRK 140  
Db 61 EFNITMQIMRIKPHQGH-IGEMSFLOHNSKCECRPKKDRARQENPCGCSERRK 113  
  
RESULT 12  
Q8WMQ4 PRELIMINARY; PRT; 127 AA.  
AC Q8WMQ4;  
DT 01-MAR-2002 (TrEMBLrel. 20, Created)  
DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Vascular endothelial growth factor (Fragment).  
OS Sus scrofa (Pig).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.  
OX NCBI\_TaxID=9823;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Myocardium;  
RA Yuan H., Li J.;  
RT "The expression of VEGF in porcine collateral-dependent myocardial by  
RT exercise training."  
RL Submitted (JAN-2002) to the EMBL/GenBank/DBJ databases.  
DR EMBL; AY072734; AAL68393.1; -  
DR GO; GO:0016020; C:membrane; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0008151; P:cell growth and/or maintenance; IEA.  
DR InterPro; IPR002400; GF\_cysknot.  
DR InterPro; IPR000072; PD\_growth\_factor.  
DR Pfam; PF00341; PDGF; 1.  
DR PRINTS; PR00438; GFCYSKNOT.  
DR ProDom; PD001629; PD\_growth\_factor; 1.  
DR SMART; SM00141; PDGF; 1.  
DR PROSITE; PS00249; PDGF\_1; 1.  
DR PROSITE; PS50278; PDGF\_2; 1.  
FT NON\_TER 127 127  
SQ SEQUENCE 127 AA; 14920 MW; 5AB63F01AEBBC29ED CRC64;

Query Match 34.0%; Score 287.5; DB 6; Length 127;  
Best Local Similarity 49.5%; Pred. No. 1.9e-25;  
Matches 54; Conservative 18; Mismatches 36; Indels 1; Gaps 1;  
  
QY 41 EVWGRSYCRPMEKLVYIADHPNEVSHIFSPCVLLSRCSGCCGDEGLHCVALKTANITM 100  
Db 2 DVYQSYCRPIETLVDFQYEPDEIEYIFKPSCVPLMRCCGCCNDEGLECVTEEFNIAM 61  
  
QY 101 QILKIPPNRDPHSYVEMTFSQDVLCECRPILETTKAERRKTGKRKQSK 149  
Db 62 QIMRIKPHQGH-IGEMSFLOHNSKCECRPKKDRARQEKSVRGKGQK 109

RESULT 13  
O77643 PRELIMINARY; PRT; 190 AA.  
AC O77643;  
DT 01-NOV-1998 (TrEMBLrel. 08, Created)  
DT 01-NOV-1998 (TrEMBLrel. 08, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Vascular endothelial growth factor.  
GN VEGF.  
OS Ovis aries (Sheep).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
OC Bovidae; Caprinae; Ovis.  
OX NCBI\_TaxID=9940;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC STRAIN=Columbia-Rambouillet;  
RA Cheung C.Y., Brace R.A.;  
RT "Ovine vascular endothelial growth factor: Nucleotide sequence and  
expression in fetal tissues.";



GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: September 13, 2004, 09:45:39 ; Search time 39 Seconds  
(without alignments)  
389.699 Million cell updates/sec

Title: US-10-071-370A-4  
Perfect score: 846  
Sequence: 1 MLAMKLFCTCFLQVLAVH.....RKTGKRKQSKTPQTEEPHL 158

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : PIR\_78:\*  
1: pirl:\*  
2: pirl2:\*  
3: pirl3:\*  
4: pirl4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match % | Length | DB ID    | Description        |
|------------|-------|---------------|--------|----------|--------------------|
| 1          | 846   | 100.0         | 158    | 2 A56125 | placental growth f |
| 2          | 474.5 | 56.1          | 149    | 2 A41236 | placental growth f |
| 3          | 320.5 | 37.9          | 214    | 2 A44881 | vascular endotheli |
| 4          | 315   | 37.2          | 232    | 2 A41551 | vascular endotheli |
| 5          | 300.5 | 35.5          | 190    | 2 B44881 | vascular endotheli |
| 6          | 299.5 | 35.4          | 190    | 2 A35987 | glioma-derived vas |
| 7          | 296.5 | 35.0          | 190    | 2 S52130 | vascular endotheli |
| 8          | 283.5 | 33.5          | 190    | 2 B40080 | vascular endotheli |
| 9          | 282   | 33.3          | 146    | 2 S57956 | ovine vascular end |
| 10         | 278   | 32.9          | 120    | 2 A33787 | vascular endotheli |
| 11         | 233   | 27.5          | 128    | 2 I51295 | vascular endotheli |
| 12         | 193   | 22.8          | 133    | 2 B49530 | vascular endotheli |
| 13         | 188   | 22.2          | 207    | 2 JC4679 | vascular endotheli |
| 14         | 184   | 21.7          | 188    | 2 JC4680 | vascular endotheli |
| 15         | 167   | 19.7          | 148    | 2 D49530 | 16K vascular endot |
| 16         | 144   | 17.0          | 419    | 2 S69207 | vascular endotheli |
| 17         | 114   | 13.5          | 225    | 2 S25097 | platelet-derived g |
| 18         | 112   | 13.2          | 241    | 1 PFMSG  | platelet-derived g |
| 19         | 110   | 13.0          | 245    | 1 TVCTSS | platelet-derived g |
| 20         | 108   | 12.8          | 241    | 1 PFHUG2 | platelet-derived g |
| 21         | 96.5  | 11.4          | 226    | 1 TVMVSS | PDGF-related trans |
| 22         | 96.5  | 11.4          | 271    | 2 A25669 | PDGF-related trans |
| 23         | 92.5  | 10.9          | 197    | 2 S25096 | platelet-derived g |
| 24         | 89.5  | 10.6          | 211    | 1 PFHUG1 | platelet-derived g |
| 25         | 89.5  | 10.6          | 215    | 2 S08220 | platelet-derived g |
| 26         | 84.5  | 10.0          | 196    | 2 A48851 | platelet-derived g |
| 27         | 83    | 9.8           | 226    | 2 I51550 | platelet-derived g |
| 28         | 82.5  | 9.8           | 370    | 2 JC7592 | spinal cord-derive |
| 29         | 82    | 9.7           | 370    | 2 JC7998 | platelet-derived g |

|    |      |     |      |          |                    |
|----|------|-----|------|----------|--------------------|
| 30 | 81   | 9.6 | 166  | 2 JN0248 | platelet-derived g |
| 31 | 81   | 9.6 | 198  | 2 JS0735 | platelet-derived g |
| 32 | 81   | 9.6 | 630  | 2 T00351 | hypothetical prote |
| 33 | 80   | 9.5 | 196  | 2 B28964 | platelet-derived g |
| 34 | 78.5 | 9.3 | 1717 | 1 A45558 | epidermal growth f |
| 35 | 77.5 | 9.2 | 326  | 2 F81714 | ABC transporter, p |
| 36 | 77.5 | 9.2 | 370  | 2 JC7591 | spinal cord-derive |
| 37 | 77   | 9.1 | 196  | 2 A37359 | platelet-derived g |
| 38 | 77   | 9.1 | 200  | 2 I51551 | platelet-derived g |
| 39 | 77   | 9.1 | 420  | 2 A25876 | vitellogenin III p |
| 40 | 76   | 9.0 | 2712 | 2 T30949 | hypothetical prote |
| 41 | 76   | 9.0 | 3864 | 2 D87757 | protein C44E4.1a { |
| 42 | 74.5 | 8.8 | 150  | 2 B30097 | ribosomal protein  |
| 43 | 74.5 | 8.8 | 153  | 2 A56064 | ribosomal protein  |
| 44 | 74   | 8.7 | 701  | 1 B44259 | kinesin-related pr |
| 45 | 73.5 | 8.7 | 294  | 2 C72050 | conserved hypothet |

ALIGNMENTS

RESULT 1

A56125  
placental growth factor precursor - rat  
C;Species: Rattus norvegicus (Norway rat)  
C;Date: 19-Oct-1995 #sequence\_revision 19-Oct-1995 #text\_change 05-Nov-1999  
C;Accession: A56125  
R;DiSalvo, J.; Bayne, M.L.; Conn, G.; Kwok, P.W.; Trivedi, P.G.; Soderman, D.D.; Palisi, J. Biol. Chem. 270, 7717-7723, 1995  
A;Title: Purification and characterization of a naturally occurring vascular endothelial  
A;Reference number: A56125; MUID:95221439; PMID:7706320  
A;Accession: A56125  
A;Status: preliminary; not compared with conceptual translation  
A;Molecule type: mRNA  
A;Residues: 1-158 <DIS>  
A;Cross-references: GB:I40030; NID:g1263413; PIDN:AAA97426.1; PID:g1263414  
C;Keywords: glycoprotein

Query Match 100.0%; Score 846; DB 2; Length 158;  
Best Local Similarity 100.0%; Pred. No. 4.4e-78;  
Matches 158; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

|    |     |                     |                       |                               |     |
|----|-----|---------------------|-----------------------|-------------------------------|-----|
| QY | 1   | MLAMKLFCTCFLQVLAVH  | SOGLSAGNNS            | TEMEVVPFNEVWGRSYCRPMEKLVYIADE | 60  |
| Db | 1   | MLAMKLFCTCFLQVLAVH  | SOGLSAGNNS            | TEMEVVPFNEVWGRSYCRPMEKLVYIADE | 60  |
| QY | 61  | HPNEVSHIFSPCVLLSRCS | CGCCGDEGLHCVALKTANIT  | MQILKIPPNRDPHSYVEMTFS         | 120 |
| Db | 61  | HPNEVSHIFSPCVLLSRCS | CGCCGDEGLHCVALKTANIT  | MQILKIPPNRDPHSYVEMTFS         | 120 |
| QY | 121 | QDVLCECRPILETTKAER  | RRTKTKGRKQSKTPQTEEPHL | 158                           |     |
| Db | 121 | QDVLCECRPILETTKAER  | RRTKTKGRKQSKTPQTEEPHL | 158                           |     |

RESULT 2

A41236  
placental growth factor precursor - human  
C;Species: Homo sapiens (man)  
C;Date: 19-Jun-1992 #sequence\_revision 19-Jun-1992 #text\_change 05-Nov-1999  
C;Accession: A41236  
R;Maglione, D.; Guerriero, V.; Viglietto, G.; Delli-Bovi, P.; Persico, M.G. Proc. Natl. Acad. Sci. U.S.A. 88, 9267-9271, 1991  
A;Title: Isolation of a human placenta cDNA coding for a protein related to the vascular  
A;Reference number: A41236; MUID:92021031; PMID:1924389  
A;Accession: A41236  
A;Status: preliminary  
A;Molecule type: mRNA  
A;Residues: 1-149 <MAG>  
A;Cross-references: GB:X54936; NID:g35521; PIDN:CAA38698.1; PID:g35522  
C;Genetics:  
A;Gene: GDB:PGF  
A;Cross-references: GDB:I34676; OMIM:601121



A;Map position: 14q24-14q31

Query Match 56.1%; Score 474.5; DB 2; Length 149;  
Best Local Similarity 64.1%; Pred. No. 1.4e-40;  
Matches 91; Conservative 19; Mismatches 27; Indels 5; Gaps 2;

QY 1 MLAMKLTCTFLQVLAVHS----QGALSAGNNTSTMEVVPFNEVWGRSYCRPMEKLVY 56  
Db 1 MPVMRLFPCLQLLAGLALPAVPPQQWALSAGNSSEVEVFPQEVWGRSYCRALERLVD 60  
QY 57 IADEHPNEVSHIFSPSCVLLSRSCGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVE 116  
Db 61 VVSEYPPSEVHMFSPSCVSLLRCTGCCGDEGLHCVLPVETANVTMQLLKIRSGDRP-SYVE 119  
QY 117 MTFSDVLCRPILETTKAER 138  
Db 120 LTFSDVLRCECRPLREKMKPER 141

RESULT 3

A44881  
vascular endothelial growth factor-3 precursor - mouse  
N;Contains: vascular endothelial growth factor-2; vascular permeability factor  
C;Species: Mus musculus (house mouse)  
C;Date: 03-Feb-1994 #sequence\_revision 03-Feb-1994 #text\_change 08-Oct-1999  
C;Accession: A44881; C44881; A60932; S52136  
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.  
Development 114, 521-532, 1992  
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis  
A;Reference number: A44881; MUID:92274860; PMID:1592003  
A;Accession: A44881  
A;Molecule type: mRNA  
A;Residues: 1-214 <BRE>  
A;Cross-references: GB:S37052; NID:g249856; PIDN:AAB22252.1; PID:g249857  
A;Experimental source: embryo  
A;Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)  
A;Accession: C44881  
A;Molecule type: mRNA  
A;Residues: 1-140,209-214 <BR2>  
A;Cross-references: GB:S38100; NID:g249860; PIDN:AAB22254.1; PID:g249861  
A;Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIP:107625)  
R;Clauss, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familletti, P.C.; Pan, Y.C.  
J. Exp. Med. 172, 1535-1545, 1990  
A;Title: Vascular permeability factor: a tumor-derived polypeptide that induces endothelial  
A;Reference number: A60932; MUID:91079755; PMID:2258694  
A;Accession: A60932  
A;Molecule type: protein  
A;Residues: 27-33 <CLA>  
R;Sugihara, T.; Kaul, S.C.; Mitsui, Y.; Wadhwa, R.  
Biochim. Biophys. Acta 1224, 365-370, 1994  
A;Title: Enhanced expression of multiple forms of VEGF is associated with spontaneous im  
A;Reference number: S52136; MUID:95101726; PMID:7803491  
A;Accession: S52136  
A;Status: preliminary  
A;Molecule type: protein  
A;Residues: 27-46 <SUG>  
C;Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.  
F;1-26/Domain: signal sequence #status predicted <SIG>  
F;27-214/Product: vascular endothelial growth factor-3 #status experimental <MAT>

Query Match 37.9%; Score 320.5; DB 2; Length 214;  
Best Local Similarity 48.1%; Pred. No. 7.5e-25;  
Matches 62; Conservative 20; Mismatches 46; Indels 1; Gaps 1;

QY 21 SQGALSAGNNTSTMEVVPFNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRCS 80  
Db 24 SQAAPTTEGEQKSHVEIKEMDVYQSYCRPIETLVDIFQEYFDEIEYIFKPSCVPLMRCA 83  
QY 81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVMTFSQDVLCECRPILETTKAERRK 140  
Db 84 GCCNDEALECVPTSESNITMQIMRIKPHQSQH-IGMSFLQHSRCECRPKDKRTKPEKKS 142

QY 141 TKGKRKQSK 149  
Db 143 VRGKGKQK 151

RESULT 4

A41551  
vascular endothelial growth factor 206 precursor - human  
N;Alternate names: vascular permeability factor  
N;Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 165; VEGF 189; VEGF  
C;Species: Homo sapiens (man)  
C;Date: 28-Aug-1992 #sequence\_revision 28-Aug-1992 #text\_change 05-Nov-1999  
C;Accession: A41551; C41551; B41551; A40454; B40454; C40454; A40079; A40080; JQ1463; JQ  
R;Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.  
Mol. Endocrinol. 5, 1806-1814, 1991  
A;Title: The vascular endothelial growth factor family: identification of a fourth mole  
A;Reference number: A41551; MUID:92168017; PMID:1791831  
A;Accession: A41551  
A;Molecule type: mRNA  
A;Residues: 1-232 <HOU1>  
A;Cross-references: GB:S85192; NID:g246155; PID:g246156  
A;Accession: C41551  
A;Status: nucleic acid sequence not shown  
A;Molecule type: mRNA  
A;Residues: 1-140,'N',183-232 <HOU2>  
A;Accession: B41551  
A;Status: nucleic acid sequence not shown; not compared with conceptual translation  
A;Molecule type: mRNA  
A;Residues: 1-141,227-232 <HOU>  
R;Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.C.; A  
J. Biol. Chem. 266, 11947-11954, 1991  
A;Title: The human gene for vascular endothelial growth factor. Multiple protein forms a  
A;Reference number: A40454; MUID:91268072; PMID:1711045  
A;Accession: A40454  
A;Molecule type: DNA  
A;Residues: 1-165,183-232 <TI1>  
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63976; GE  
A;Accession: B40454  
A;Molecule type: DNA  
A;Residues: 1-140,'N',183-232 <TI2>  
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978  
A;Accession: C40454  
A;Molecule type: DNA  
A;Residues: 1-141,227-232 <TI3>  
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978  
R;Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly, D.T.  
Science 246, 1309-1312, 1989  
A;Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF.  
A;Reference number: A40079; MUID:90069609; PMID:2479987  
A;Accession: A40079  
A;Status: not compared with conceptual translation  
A;Molecule type: mRNA  
A;Residues: 1-165,183-232 <KEC>  
A;Cross-references: GB:M27281; NID:g340300; PIDN:AAA36807.1; PID:g340301  
R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.  
Science 246, 1306-1309, 1989  
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.  
A;Reference number: A40080; MUID:90069608; PMID:2479986  
A;Accession: A40080  
A;Status: not compared with conceptual translation  
A;Molecule type: mRNA  
A;Residues: 1-140,'N',183-232 <LEU>  
A;Cross-references: GB:M32977; NID:g181970; PIDN:AAA35789.1; PID:g181971  
R;Weindel, K.; Marne, D.; Welch, H.A.  
Biochem. Biophys. Res. Commun. 183, 1167-1174, 1992  
A;Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endothelial  
A;Reference number: JQ1463; MUID:92231879; PMID:1567395  
A;Accession: JQ1463  
A;Molecule type: mRNA  
A;Residues: 1-140,'N',183-232 <WEI>  
A;Cross-references: EMBL:X62568; NID:g37658; PIDN:CAA44447.1; PID:g37659  
A;Experimental source: AIDS-Kaposi's sarcoma cell  
A;Accession: JQ1464



C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein; mit

A;Molecule type: mRNA  
A;Residues: 1-140,'N',227-232 <WE2>  
A;Experimental source: AIDS-Kaposi's sarcoma cell  
R;Connolly, D.T.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.; Hay  
J. Biol. Chem. 264, 20017-20024, 1989  
A;Title: Human vascular permeability factor. Isolation from U937 cells.  
A;Reference number: A34492; MUID:90062112; PMID:2584205  
A;Accession: A34492  
A;Molecule type: protein  
A;Residues: 27-36;43-49,'R',72-76,'Q',78-81;59-71 <CON>  
C;Comment: The most common of several alternatively spliced forms is VEGF 165.  
C;Genetics:  
A;Gene: GDB:VEGF  
A;Cross-references: GDB:132244; OMIM:192240  
A;Map position: 6p21-6p12  
C;Function:  
A;Description: promotes fluid and protein leakage from blood vessels  
C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular pro  
F;1-232/Product: vascular endothelial growth factor 206 precursor #status predicted <V20  
F;1-165,183-232/Product: vascular endothelial growth factor 189 precursor #status predic  
F;1-141,227-232/Product: vascular endothelial growth factor 121 precursor #status predic  
F;1-26/Domain: signal sequence #status predicted <SIG>  
F;101/Binding site: carbohydrate (Asn) (covalent) #status predicted  
Query Match 37.2%; Score 315; DB 2; Length 232;  
Best Local Similarity 47.7%; Pred. No. 2.9e-24;  
Matches 62; Conservative 21; Mismatches 45; Indels 2; Gaps 2;  
QY 21 SQGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRC 79  
Db 24 SQAAPMAEGGQNHHEVVKFMDVYQSYCRPIETLVDIFQEYPDEIEYIFKPSCVPLMRC 83  
QY 80 SGCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTKAERR 139  
Db 84 GGCCNDEGLECVPTESNITMQIMRIKPHQSQH-IGEMSFLOHNSCRPKKDRARQEKK 142  
QY 140 KTKGKRQSK 149  
Db 143 SVRGKGQK 152  
RESULT 5  
B44881  
vascular endothelial growth factor-1 precursor - mouse  
C;Species: Mus musculus (house mouse)  
C;Date: 03-Feb-1994 #sequence\_revision 03-Feb-1994 #text\_change 05-Nov-1999  
C;Accession: B44881; A43351; A61029  
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.  
Development 114, 521-532, 1992  
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis  
A;Reference number: A44881; MUID:92274860; PMID:1592003  
A;Accession: B44881  
A;Molecule type: mRNA  
A;Residues: 1-190 <BRE>  
A;Cross-references: GB:S38083; NID:9249858; PIDN:AAE22253.1; PID:9249859  
A;Experimental source: embryo  
A;Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)  
R;Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.  
J. Biol. Chem. 267, 16317-16322, 1992  
A;Title: Vascular endothelial growth factor. Regulation by cell differentiation and acti  
A;Reference number: A43351; MUID:92355593; PMID:1644816  
A;Accession: A43351  
A;Molecule type: mRNA  
A;Residues: 1-116,'ER',119-190 <CLA>  
A;Cross-references: GB:M95200; NID:9202350; PIDN:AAA40547.1; PID:9202351  
A;Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)  
R;Rosenthal, R.A.; Megyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.  
Growth Factors 4, 53-59, 1990  
A;Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelial g  
A;Reference number: A61029; MUID:91197543; PMID:2085441  
A;Accession: A61029  
A;Molecule type: protein  
A;Residues: 27-38 <ROS>

Query Match 35.5%; Score 300.5; DB 2; Length 190;

Best Local Similarity 47.7%; Pred. No. 6.9e-23;

Matches 61; Conservative 18; Mismatches 40; Indels 9; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRC 80

Db 24 SQAAPTTEGEQKSHVEIKFMDVYQSYCRPIETLVDIFQEYPDEIEYIFKPSCVPLMRCA 83

QY 81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK----- 135

Db 84 GCCNDEALECVPTESNITMQIMRIKPHQSQH-IGEMSFLOHNSCRPKKDRTPENHC 142

QY 136 ---AERRK 140

Db 143 EPCSERRK 150

RESULT 6

A35987

glioma-derived vascular endothelial cell growth factor - rat

C;Species: Rattus norvegicus (Norway rat)

C;Date: 16-Nov-1990 #sequence\_revision 16-Nov-1990 #text\_change 05-Nov-1999

C;Accession: A35987

R;Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Hope,

Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990

A;Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is hor

A;Reference number: A35987; MUID:90207249; PMID:2320579

A;Accession: A35987

A;Status: preliminary

A;Molecule type: mRNA

A;Residues: 1-190 <CON>

A;Cross-references: GB:M32167; NID:9204287; PIDN:AAA41211.1; PID:9204288

Query Match 35.4%; Score 299.5; DB 2; Length 190;

Best Local Similarity 47.7%; Pred. No. 8.7e-23;

Matches 61; Conservative 18; Mismatches 40; Indels 9; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRC 80

Db 24 SQAAPTTEGEQKSHVEIKFMDVYQSYCRPIETLVDIFQEYPDEIEYIFKPSCVPLMRCA 83

QY 81 GCCGDEGLHCVALKTANITMQILKIPPNRDPHSYVEMTFSQDVLCECRPILETTK----- 135

Db 84 GCCNDEALECVPTESNITMQIMRIKPHQSQH-IGEMSFLOHNSCRPKKDRTPENHC 142

QY 136 ---AERRK 140

Db 143 EPCSERRK 150

RESULT 7

S52130

vascular endothelial growth factor - pig

C;Species: Sus scrofa domestica (domestic pig)

C;Date: 14-Jul-1995 #sequence\_revision 21-Jul-1995 #text\_change 05-Nov-1999

C;Accession: S52130

R;Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.

Biochim. Biophys. Acta 1260, 235-238, 1995

A;Title: Nucleotide sequence and expression of the porcine vascular endothelial growth f

A;Reference number: S52130; MUID:95143284; PMID:7841203

A;Accession: S52130

A;Status: preliminary

A;Molecule type: mRNA

A;Residues: 1-190 <SHA>

A;Cross-references: GB:X81380; NID:9587559; PIDN:CAA57143.1; PID:9587560

Query Match 35.0%; Score 296.5; DB 2; Length 190;

Best Local Similarity 48.4%; Pred. No. 1.8e-22;

Matches 62; Conservative 17; Mismatches 40; Indels 9; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVFPNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRC 80

Db 24 SQAAPMAEGDQKPEHVVKFMDVYQSRFCRPIETLVDIFQEYFDEIEFIFKPSVPLMRG 83  
QY 81 GCCGDEGLHCVALKTANITMQLKIPPNRDPHSHYVEMTFSDVLCERPILETTK----- 135  
Db 84 GCCNDEGLECVPTTEFNITMQLMIRIKPHQSQH-IGEMSFLOHKNKCECRPKKQARQENPC 142  
QY 136 ---AERRK 140  
Db 143 GPCSEERRK 150

## RESULT 8

B40080

vascular endothelial growth factor precursor (version 2) - bovine

C;Species: Bos primigenius taurus (cattle)

C;Date: 30-Jun-1992 #sequence\_revision 30-Jun-1992 #text\_change 05-Nov-1999

C;Accession: B40080; B33787; A33255

R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.

Science 246, 1306-1309, 1989

A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.

A;Reference number: A40080; MUID:90069608; PMID:2479986

A;Accession: B40080

A;Molecule type: mRNA

A;Residues: 1-190 &lt;LEU&gt;

A;Cross-references: GB:M32976; NID:gl63006; PIDN:AAA30502.1; PID:gl63007

R;Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Crisp

Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989

A;Title: Vascular endothelial growth factor: a new member of the platelet-derived growth

A;Reference number: A33787; MUID:90121225; PMID:2610687

A;Accession: B33787

A;Molecule type: mRNA

A;Residues: 27-190 &lt;TIS&gt;

A;Cross-references: GB:M31836; NID:gl63808; PIDN:AAA30804.1; PID:gl63809

R;Ferrara, N.; Henzel, W.J.

Biochem. Biophys. Res. Commun. 161, 851-858, 1989

A;Title: Pituitary follicular cells secrete a novel heparin-binding growth factor specif

A;Reference number: A33255; MUID:89286596; PMID:2735925

A;Accession: A33255

A;Molecule type: protein

A;Residues: 27-31 &lt;FER&gt;

C;Keywords: alternative splicing; glycoprotein

F;1-26/Domain: signal sequence #status predicted &lt;SIG&gt;

F;27-190/Product: vascular endothelial growth factor #status predicted &lt;MAT&gt;

F;100/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 33.5%; Score 283.5; DB 2; Length 190;  
Best Local Similarity 46.9%; Pred. No. 3.6e-21;  
Matches 60; Conservative 16; Mismatches 43; Indels 9; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRCS 80  
Db 24 SQAAPMAEGGQKPEHVVKFMDVYQSRFCRPIETLVDIFQEYFDEIEFIFKPSVPLMRG 83  
QY 81 GCCGDEGLHCVALKTANITMQLKIPPNRDPHSHYVEMTFSDVLCERPILETTK----- 135  
Db 84 GCCNDEGLECVPTTEFNITMQLMIRIKPHQSQH-IGEMSFLOHKNKCECRPKKQARQENPC 142  
QY 136 ---AERRK 140  
Db 143 GPCSEERRK 150

## RESULT 9

S57956

ovine vascular endothelial growth factor - sheep

C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)

C;Date: 13-Jan-1996 #sequence\_revision 01-Mar-1996 #text\_change 05-Nov-1999

C;Accession: S57956

R;Redmer, D.A.; Dai, Y.; Li, J.; Jones, S.C.; Moor, R.M.

submitted to the EMBL Data Library, July 1995

A;Reference number: S57956

A;Accession: S57956

A;Status: preliminary  
A;Molecule type: mRNA  
A;Residues: 1-146 <RED>  
A;Cross-references: EMBL:X89506; NID:g899350; PIDN:CAA61677.1; PID:g899351

Query Match 33.3%; Score 282; DB 2; Length 146;  
Best Local Similarity 43.9%; Pred. No. 3.9e-21;  
Matches 58; Conservative 20; Mismatches 44; Indels 10; Gaps 2;

QY 21 SQGALSAGNNSTEMEVVPFNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRCS 80  
Db 24 SQAAPMAEGGQKPEHVVKFMDVYQSRFCRPIETLVDIFQEYFDEIEFIFKPSVPLMRG 83  
QY 81 GCCGDEGLHCVALKTANITMQLKIPPNRDPHSHYVEMTFSDVLCERPILETTKAERRK 140  
Db 84 GCCNDEGLECVPTTEFNITMQLMIRIKPHQSQH-IGEMSFLOHKNKCECRP-----KK 133  
QY 141 TKGKRKQSKTPQ 152  
Db 134 DKARQEKCDKPR 145

## RESULT 10

A33787

vascular endothelial growth factor (version 1) - bovine

C;Species: Bos primigenius taurus (cattle)

C;Date: 16-Mar-1990 #sequence\_revision 16-Mar-1990 #text\_change 05-Nov-1999

C;Accession: A33787

R;Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Crisp

Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989

A;Title: Vascular endothelial growth factor: a new member of the platelet-derived growth

A;Reference number: A33787; MUID:90121225; PMID:2610687

A;Accession: A33787

A;Status: preliminary

A;Molecule type: mRNA

A;Residues: 1-120 &lt;TIS&gt;

A;Cross-references: GB:M33750; NID:gl63810; PIDN:AAA30805.1; PID:gl63811

C;Keywords: alternative splicing

Query Match 32.9%; Score 278; DB 2; Length 120;  
Best Local Similarity 46.6%; Pred. No. 7.9e-21;  
Matches 55; Conservative 19; Mismatches 34; Indels 10; Gaps 2;

QY 35 EVVPFNEVWGRSYCRPMEKLVYIADEHPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALK 94  
Db 12 EVVKFMDVYQSRFCRPIETLVDIFQEYFDEIEFIFKPSVPLMRGCGCCNDESLCVPTE 71  
QY 95 TANITMQLKIPPNRDPHSHYVEMTFSDVLCERPILETTKAERRKTKGKRKQSKTPQ 152  
Db 72 EFNITMQLMIRIKPHQSQH-IGEMSFLOHKNKCECRP-----KKDKARQEKCDKPR 119

## RESULT 11

I51295

vascular endothelial growth factor - quail (fragment)

C;Species: Phasianidae gen. sp. (quail)

C;Date: 13-Sep-1996 #sequence\_revision 13-Sep-1996 #text\_change 28-Feb-1997

C;Accession: I51295

R;Flamme, I.; Breier, G.; Risau, W.

Dev. Biol. 169, 699-712, 1995

A;Title: Vascular endothelial growth factor (VEGF) and VEGF receptor 2 (flk-1) are expre

A;Reference number: I51295; MUID:95301109; PMID:7781909

A;Accession: I51295

A;Status: preliminary; translated from GB/EMBL/DBJ

A;Molecule type: DNA

A;Residues: 1-128 &lt;FLA&gt;

A;Cross-references: GB:S78343; NID:g999147; PID:g999148

C;Genetics:

A;Gene: VEGF

Query Match 27.5%; Score 233; DB 2; Length 128;  
Best Local Similarity 42.9%; Pred. No. 3e-16;  
Matches 45; Conservative 21; Mismatches 33; Indels 6; Gaps 2;



Search completed: September 13, 2004, 09:54:11  
Job time : 40 secs